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ABSTRACT

This competency-based curriculum guide on the specialty area of drywall is part of the Introduction to Construction series. The series is designed with the flexible training requirements of open shop contractors, preapprenticeship programs, multicraft high school programs, technology education programs, and cooperative education programs in mind. This guide contains three instructional units: drywall materials, drywall tools, and drywall layout and basic skills. Eight basic components form a unit of instruction: performance objectives (unit and specific objectives), suggested activities for the teacher (an outline of unit contents and an instructor's guide), information sheets, assignment sheets, job sheets, transparency masters and supplements, tests, and answers to tests and assignment sheets. (YLB)

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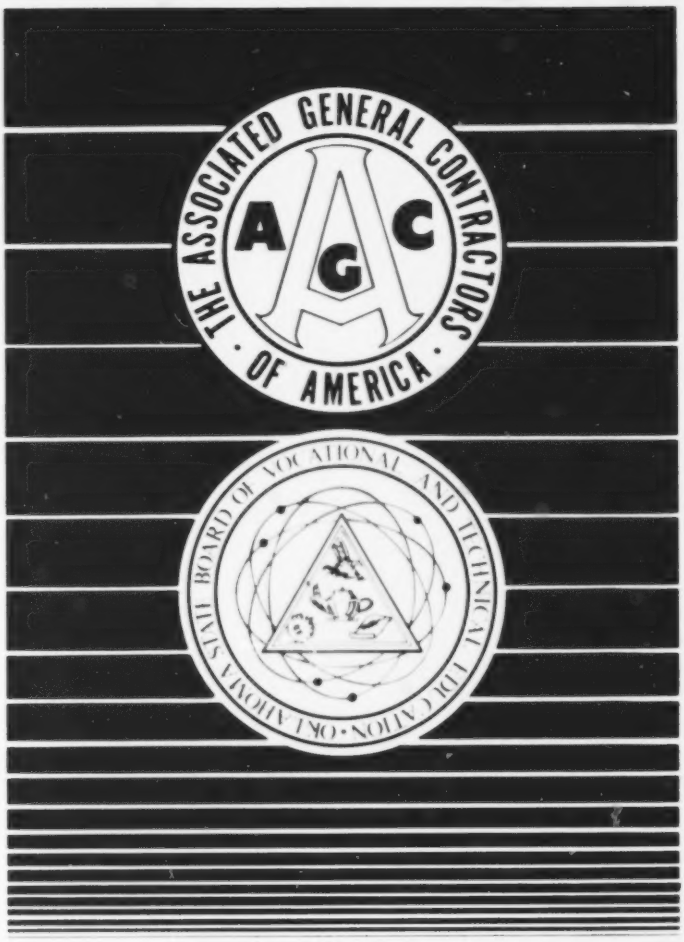

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Introduction to Drywall

CE051497

Introduction to Construction Series

instructor edition

89 005932

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INTRODUCTION TO DRYWALL
COMPETENCY PROFILE

Student _____ Soc. Sec. No. ___ ___ ___
Last First MI

_____ Grade 9 10 11 12 Adult _____
PROGRAM SCHOOL

_____ _____ _____
INSTRUCTOR SCHOOL ADDRESS PHONE

_____ _____ _____
STUDENT'S HOME ADDRESS DATE OF BIRTH PHONE

_____ _____ _____
STUDENT'S EMPLOYER ADDRESS PHONE

_____ _____ _____
CONTACT IN CASE OF EMERGENCY PHONE

ADDRESS _____

OR

_____ _____
ADDRESS PHONE

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DURATION OF EMPLOYMENT	JOB TITLE	EMPLOYER	SUPERVISOR'S NAME	ADDRESS OF EMPLOYER	PHONE

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SPECIFIC JOB COMPETENCIES

Directions: Evaluate the trainee using the rating scale below and check the appropriate number to indicate the degree of competency achieved. The numerical ratings of 4, 3, 2, 1, and 0 are not intended to represent the traditional school grading system of A, B, C, D, and F. The descriptions associated with each of the numbers focus on level of student performance for each of the tasks listed below. The written test score line is provided for optional teacher use. It may not be applicable in all cases. "NA" is an appropriate entry in such instances.

Rating Scale:
4 — Skilled — can perform independently with no additional training.
3 — Moderately Skilled — has performed independently during training program, limited additional training may be required.
2 — Limited Practice — has practiced during training program, additional training is required to develop skill.
1 — Exposure Only — general information provided with no practice time, close supervision needed and additional training required.
0 — No Exposure — no information nor practice provided during training program, complete training required.

4 3 2 1 0
☐☐☐☐☐ *Drywall Materials*
☐☐☐☐☐ 1. _____

WRITTEN TEST SCORE _____

4 3 2 1 0
☐☐☐☐☐ *Drywall Tools*
☐☐☐☐☐ 1. _____

WRITTEN TEST SCORE _____

4 3 2 1 0
☐☐☐☐☐ *Drywall Layout and Basic Skills*
☐☐☐☐☐ 1. Install gypsum wallboard
☐☐☐☐☐ 2. Finish wallboard surface
☐☐☐☐☐ 3. Apply laminated gypsum wallboard
☐☐☐☐☐ 4. Install predecorated wallboard
☐☐☐☐☐ 5. _____

WRITTEN TEST SCORE _____

Use of This Document

This document can be used to record information about the student and the skills mastered by the student. This information is useful in documenting student progress during the training program and to provide information about the student's qualifications to potential employers and for entry into advanced training programs. Instructors using AGC-CIMC instructional materials are authorized to reproduce this document as required for use in their training programs.

INTRODUCTION TO DRYWALL

Developed as a Cooperative Project by
The Associated General Contractors of America
William K. Healy, Chairman, Manpower and Training Committee
and
Oklahoma State Board of Vocational and Technical Education
John Folks, Chairman
Roy Peters, Jr., Director

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INTRODUCTION TO DRYWALL

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Unit I Drywall Materials ITD-1

Unit II Drywall Tools. ITD-25

Unit III Drywall Layout and Basic Skills ITD-51

FOREWORD

In 1985, The Associated General Contractors of America (AGC) met with representatives of the Oklahoma Curriculum and Instructional Materials Center (CIMC) to discuss the possibilities of developing, as a cooperative project, a course of instruction designed for training individuals who choose to seriously explore careers in construction.

This publication is the result of those original discussions and close coordination among general contractors and vocational educators. This series represents a conscious effort to coordinate the practical experience of personnel in the construction industry with the best instructional methods of those in the field of vocational education.

Although this series reflects a systematic approach to instructional materials development and the latest in educational technology innovations, the information in *Introduction to Drywall* should be adapted and modified to coincide with local conditions.

Roy Peters, Jr., Director
Oklahoma State Department of
Vocational and Technical Education

William K. Healy, Chairman
Manpower and Training Committee
The Associated General Contractors
of America

PREFACE

For many years The Associated General Contractors of America (AGC) has recognized the need for providing quality compentency-based instructional materials for the construction industry. AGC and the Oklahoma State Department of Vocational and Technical Education have met this challenge by providing nationally recognized curriculum and services since 1972. In 1986 AGC and Oklahoma's Curriculum and Instructional Materials Center (CIMC) determined a significant need for a series that would address training needs of open shop contractors, preapprenticeship programs, multi-craft high school programs, technology educational programs, CVET, and cooperative education programs. The Introduction to Construction Series was designed with the flexible training requirements of these groups in mind.

The Introduction to Construction Series begins with *Fundamentals of Construction* and progresses to twelve spin-off specialty publications. *Fundamentals of Construction* covers basic knowledge necessary for all individuals in construction. Each specialty area covers basic skills necessary for entry-level employment. Both vocational education and the construction industry offer more advanced courses in each specialty area and should be considered by individuals wishing to establish careers in the industry. Competency profiles (provided in the teacher edition) for the Introduction to Construction Series articulate with several more advanced AGC publications as well as publications developed by the Mid-America Vocational Curriculum Consortium (MAVCC).

Publications in this series include:

- Introduction to Bricklaying
- Introduction to Carpentry
- Introduction to Concrete Masonry
- Introduction to Ironwork
- Introduction to Electricity
- Introduction to Plumbing
- Introduction to Heating, Ventilation, and Air Conditioning
- Introduction to Sheet Metal
- Introduction to Roofing
- Introduction to Drywall
- Introduction to Insulation
- Introduction to Welding

Instructional Units

Introduction to Drywall contains one section and three instructional units. A standard format was established in 1970 for development of instructional materials for all Oklahoma vocational teachers. This format includes eight basic components that form a unit of instruction: performance objectives, suggested activities for the teacher, information sheets, assignment sheets, job sheets, transparency masters and supplements, tests, and answers to tests and assignment sheets. Depending on the specific objectives, there may or may not be transparency masters, supplements, assignment sheets, or job sheets included in the unit of instruction.

All of the unit components "zero in" on measurable and observable learning outcomes. Teachers are encouraged to supplement, personalize, localize, and motivate with these materials in order to develop a complete teaching/learning process.

Units of instruction are designed for use in more than one lesson or class period of instruction. Careful study of each unit of instruction by the teacher will help him or her determine the following

- Amount of material that can be covered in each class period
- Skills that must be demonstrated
  - Supplies and equipment needed
  - Amount of practice needed
  - Amount of class time needed for demonstrations
- Supplementary materials, such as pamphlets and filmstrips, that must be ordered
- Resource people to contact

Performance Objectives (white pages)

Each unit of instruction is based on the performance needed for successful employment in an occupational area. Performance objectives are stated in two forms: unit objectives, stating the subject matter to be covered in a unit of instruction; and specific objectives, stating the performance necessary to reach the unit objective. Since the objectives of the unit provide direction for the teaching/learning process, it is important that teachers and students have a common understanding of the intent of the objectives.

The objective sheet should be given to students and referred to throughout the teaching/learning process. This will help answer any questions concerning performance requirements for each instructional unit. The objectives can also help determine teaching strategies and instructional methods. Prepare for each unit by deciding how each objective can best be taught.

The objective sheet may also be used as a quick pretest to determine students' prior knowledge and to determine whether further study or activities are necessary. Teachers should feel free to modify, delete, or add objectives in order to meet the needs of the students and community. When changes in objectives are made, the teacher should remember to supply the needed information, assignment and/or job sheets, and criterion test items.

Suggested Activities (pink pages)

Suggested activities are included only in teacher materials. The suggested activities pages include an outline of the unit contents and an instructor's guide designed to assist teachers in planning their presentation of the unit. The instructor's guide provides suggestions for delivery and/or presentation during the instructional process. Read the suggested activities before teaching the units so that supplemental materials can be obtained, audiovisual materials prepared, and outside resources contacted. Duties of the teacher will vary according to the particular unit.

The references that are listed in the suggested activities are ones used in the development of each unit. They may be used by the teacher to supplement her or his knowledge of the subject area or to help students with particular interests or occupational objectives in the area covered.

The suggested activities section of the unit also includes supplements and transparency masters. Each of these components provides information in a special way. Supplements may consist of motivational materials, review or practice materials such as crossword puzzles and self-tests, or charts and reference materials. Supplements are designed to be copied and distributed to individual class members or to the class as a whole. Suggestions for their use are included in the instructor's guide. Transparencies direct the class' attention to the topic of discussion. Transparencies may present new information, or they may reinforce information presented in the information sheet. They are particularly effective when identification or analysis is necessary. Order transparencies from the Curriculum and Instructional Materials Center, or make transparencies and place them in the notebook where they will be immediately available for use.

Information Sheet (green pages)

The information sheet provides "must know" content essential for meeting the cognitive (knowledge level) objectives of the unit. The information is written in a topical-outline form and is keyed to the specific objectives.

Teachers will find that the information sheet serves as an excellent guide for presenting background knowledge necessary to develop the skills specified in the unit objective. The information sheet may also be used for coordination activities and advisory committees.

Students should read the information sheet before the information is discussed in class. Space is provided in margins for students and teachers to add notes that supplement, localize, personalize, or provide motivation for each unit.

Assignment Sheets (brown pages)

Assignment sheets give students a chance at problem solving, self-assessment, and/or practical experience. They assist students in the application of knowledges that are necessary prerequisites to skill development. Assignment sheets may be given to the student for completion in class or may be used for homework assignments. Answer sheets are provided

when appropriate and can be used by the student and/or teacher for checking student progress. The scores of those assignment sheets listed in the specific objectives should be averaged with the unit test score, as the skills addressed in these assignment sheets are considered necessary in meeting the unit objective.

Job Sheets (blue pages)

Job sheets are another important segment of a unit of instruction. The job sheets provide a list of equipment, tools, and materials needed to complete a manipulative or psychomotor skill. They describe a step-by-step procedure needed to complete each task or job. Diagrams, photographs, and illustrations are provided to assist students in achieving the skill.

The teacher should demonstrate to students the procedures outlined in each job sheet. Furthermore, the teacher needs to localize the job sheet according to the equipment and supplies available in the local lab or shop situation. Job sheets also furnish potential employers with a picture of the skills being taught and the performances they might reasonably expect from a person who has had this vocational instruction.

Job sheet performance should be evaluated by the instructor and averaged with the unit test score, as the skills addressed in the job sheets are considered necessary in meeting the unit objective.

Tests (white pages)

Tests are included only in teacher materials. The test provides criterion-referenced evaluation of every objective listed in the unit of instruction. It is crucial to note that both paper/pencil and performance objectives must be evaluated.

It is recommended that the tests be divided into shorter tests covering three or four objectives at a time and given soon after those objectives have been covered. A selection of questions from the units covered may be used for final tests at the end of each term if desired. If objectives have been added, deleted, or modified, be sure to make the changes on the test.

The acceptable response on a unit test, 85 percent in most units, may be raised or lowered to fit the topic or students' ability levels. The percentage applies to the overall score, not to each question. The final unit grade should be obtained by using the paper/pencil score and evaluations of student demonstrations of the desired skills.

Answers to Test and Assignment Sheets (pink pages)

Answers to test and assignment sheets are components designed to assist the teacher in evaluation of student performances.

Page Numbering

Each publication from the Curriculum and Instructional Materials Center (CIMC) is assigned a specific abbreviation. For example, *Introduction to Drywall* has been abbreviated ITD. The units are then numbered consecutively within each section. An example of a page number is ITD-1. Since CIMC publications are loose leaf, this system of page numbering was adopted so that pages from different manuals would not get mixed up.

Methods of Disseminating Material

For best results, provide student materials for each student. Student materials contain everything but the test, supplements, answers to assignment sheets, and suggested activities.

Teaching Methods

It is a challenge to keep students motivated. Supplement the objectives by providing the "why," personal experiences, and current information. Prepare for each unit by deciding how each objective can best be taught. Allow students to become involved in preparing and planning.

Competency Profiles

Competency profiles are folders used to document student performance. The profile contains a list of the specific job competencies that a student should achieve prior to leaving the training program. A competency profile master is provided in the instructor edition of each publication. Duplicate the profile and distribute to students as required.

Other AGC Publications: AGC updates curriculum products on a continuing basis. For a free catalog describing other AGC products, call the AGC National office at 1-202-393-2040.

CORRECTIONS AND SUGGESTIONS

The Curriculum and Instructional Materials Center (CIMC) wants to provide vocational instructors and students with materials that are accurate and effective. Although the CIMC strives to maintain the highest standards of development and production, oversights occasionally do occur. If you find any errors in this or other CIMC publications, or have suggestions for improving their usefulness in vocational programs, please notify the CIMC staff. One easy way of pointing out errors is to make a photocopy of the affected page and to indicate the correction on the copy. You can mail the information to the CIMC, where it will be used to correct the publication before the materials are reprinted.

To ensure that the material is updated on a timely basis, it is important that you notify the CIMC of necessary corrections as soon as possible after discovering the error. Do not assume that someone else will notice the error and inform the CIMC; other users may be making the same assumption. Please send corrections and recommendations for improving this publication to the following address:

Coordinator for Curriculum Development
Curriculum and Instructional Materials Center
Oklahoma State Department of Vocational and
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1500 West Seventh Avenue
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DRYWALL MATERIALS
UNIT I

UNIT OBJECTIVE

After completing this unit, the student should be able to recognize and discuss gypsum wallboard materials and hardware. The student will show this ability by completing the unit test with a minimum score of 80 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Match terms associated with drywall materials to their correct definitions.
2. Name types of gypsum wallboard.
3. Select from a list standard sizes of gypsum wallboard.
4. Identify standard edge shapes of gypsum wallboard.
5. State benefits of using gypsum wallboard.
6. Describe types of base or construction where wallboard is used.
7. Identify hardware and fasteners used with gypsum wallboard.
8. Select from a list other types of materials used with wallboard.
9. Select from a list types of finishes that may be applied to gypsum wallboard.

DRYWALL MATERIALS
UNIT I

SUGGESTED ACTIVITIES

I. Unit contents

A. Objective sheet

B. Suggested activities

C. Information sheet

D. Test

E. Answers to test

II. Instructor's guide

A. Review unit and plan presentation.

B. Obtain materials to supplement unit.

1. Cutaway wall section showing drywall installation
2. Samples of the various types of wallboard
3. Literature from gypsum wallboard manufacturers
4. Models of the various types of base construction where wallboard is used
5. House plans illustrating wallboard installation
6. Samples of hardware and fasteners used with gypsum wallboard
7. Plans and schedules that show wallboard finish specifications

C. Introduce unit to students.

- Demonstrate or have a craftsman demonstrate the installation of plaster walls and ceilings and point out the time and labor plastering requires.
- Provide the class with representative costs for installing 100 square feet of plaster as compared to 100 square feet of drywall; also compare time requirements for the two jobs.
- Have a former student who works primarily as a drywall installer talk to the class about his or her job and training.

D. Provide students with objective sheet; discuss unit and specific objectives.

E. Provide students with information sheet.

F. Discuss information sheet.

SUGGESTED ACTIVITIES

1. Use Information Sheet, Section I, to discuss terms and definitions associated with drywall.

   - Show the class samples of materials when possible.
   - Show the class a cutaway wall section display with the drywall at various stages of installation to illustrate terms.

2. Use Information Sheet, Section II, to discuss types of gypsum wallboard.

   - Invite a representative from a gypsum wallboard manufacturer or distributor to discuss the various types of gypsum wallboard.
   - Provide students with samples of each type of wallboard discussed in this section of the information sheet.
   - Take the class to visit a gypsum wallboard manufacturing plant.

3. Use Information Sheet, Section III, to discuss standard sizes of gypsum wallboard.

   - Discuss reasons for and applications of the various sizes of wallboard.
   - Have students survey local distributors to determine what sizes of wallboard are normally available and which sizes must be special ordered.
   - Take the class to visit construction sites where a variety of wallboard sizes and types of gypsum wallboard are being used.

4. Use Information Sheet, Section IV, to discuss edge shapes of gypsum wallboard.

   - Have a professional drywall installer discuss reasons for the various shapes and installation techniques required.
   - Have students survey manufacturers and distributors to determine which edge shapes are available for the various types and sizes of wallboard.

5. Use Information Sheet, Section V, to discuss benefits of using gypsum wallboard.

   - Demonstrate benefits, ease of repair, noncombustibility, etc.
   - Provide students with manufacturer's or association literature describing the benefits of gypsum wallboard.
   - Have a professional wallboard installer discuss the limitations of and restrictions for using gypsum wallboard.

6. Use Information Sheet, Section VI, to discuss types of base or construction where wallboard is used.

SUGGESTED ACTIVITIES

- Display models of the various construction methods discussed in this section of the information sheet.
- Take the class to visit construction sites to view various types of wallboard installations.
- Show the class plans for the various types of installations, and discuss the purpose of each type.

7. Use Information Sheet, Sections VII and VIII, to discuss hardware and fasteners and other types of materials used with gypsum wallboard.
   - Display samples of each type of hardware and fastener and material illustrated in these sections of the information sheet.
   - Demonstrate the use of each type of hardware or fastener and other material, or invite drywall installers to demonstrate the use of each type, emphasizing hardware and fasteners and materials commonly used in your area.
8. Use Information Sheet, Section IX, to discuss types of finishes for gypsum wallboard.
   - Have the class study plans and schedules to review how finishes are specified.
   - Take the class to visit construction sites to see the application of various finishes over gypsum wallboard; try to see various stages of the application procedure from bare walls marked for the type of application to finished walls.

G. Emphasize careful handling of wallboard, safety requirements due to size and weight of wallboard materials, and power-tool safety.

   (NOTE: Use caution when lifting drywall.)

H. Give test.

I. Critique test and discuss in class.

J. Reteach and retest as necessary.

K. Complete appropriate sections of competency profiles.

   (NOTE: A master of the competency profile for this book is provided at the front of the instructor edition. You may duplicate the profile and distribute it to students as needed.)

III. Unit references

A. *Goldblatt Tool Catalog*. Kansas City, Kansas: Goldblatt Tool Company, 1983.

SUGGESTED ACTIVITIES

B. *Gypsum Construction Handbook*, 2nd ed., Chicago, Illinois: United States Gypsum Company, 1982.

C. Hendrix, Laborn J. "Bud." *Commercial Carpentry*. Stillwater, Oklahoma: Oklahoma State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, and The Associated General Contractors of America, 1986.

DRYWALL MATERIALS
UNIT I

INFORMATION SHEET

I. Terms and definitions associated with drywall

A. **Drywall** — Any rigid sheathing material applied to interior finish walls and ceilings

B. **Wallboard** — Rigid sheathing material made with a noncombustible core (usually gypsum) that is surfaced with treated paper or some other sheet material; sheathing material applied to interior finish walls and ceilings

C. **Backing** — Strips of wood nailed on top of top plate between joists and at inside wall angles of partitions; provides a solid base for nailing wallboard

D. **Joint** — Place where edges of two pieces of wallboard meet

E. **Perforated tape** — Paper tape used as reinforcement at wallboard joints to keep surface from cracking

(NOTE: Perforated tape comes in rolls that are 2 inches wide and 60, 250, or 500 feet long.)

F. **Bedding** — Joint compound applied to depression formed by butt joints and tapered wallboard edges

G. **Joint compound** — Compound used to embed perforated tape to wallboard joints, to finish over tape and corner bead, and to finish over nail or screw heads

H. **Topping** — Finish coat of compound that covers all previous coats

I. **Quick-weld compound** — Compound specially blended to set in from 20 to 90 minutes; is used almost exclusively in constructing manufactured housing

J. **Featheredge** — To spread joint compound or topping so that it tapers to a thin edge

K. **Dimple** — Impression on wallboard surface formed by a nail driven to proper depth

L. **Double nailing** — Pattern used when two nails are spaced 2 inches apart every 12 inches; pattern used on intermediate joists and studs

M. **Laminate** — To make by uniting two or more layers of material

INFORMATION SHEET

II. Types of gypsum wallboard

A. Regular

(NOTE: Regular wallboard is the most commonly used gypsum wallboard.)

B. Type "X"

(NOTE: Type "X" gypsum wallboard has a harder core than the regular type of wallboard.)

C. Insulating

(NOTE: Insulating gypsum wallboard, as the name implies, has insulation mixed into the core.)

D. Backing board

(NOTE: Backing board does not have a finished surface; therefore it is used where it will be covered with a finished material, such as paneling.)

E. Core board

(NOTE: Core board is 1 inch thick and is made up of wood filler and gypsum. It is sometimes used as subflooring.)

F. Fire code

(NOTE: Fire-code gypsum wallboard has a surface coating that prevents the spread of fires.)

G. Waterproof

(NOTE: Waterproof gypsum wallboard is recognized by its green or blue color; it is used in bathrooms and other areas that are exposed to moisture.)

H. Predecorated

(NOTE: Predecorated wallboard is available in a variety of surface materials, designs, and patterns; it is usually installed vertically because of the difficulty in matching and finishing the butt joints.)

III. Standard sizes of gypsum wallboard

(NOTE: Wallboard can be special ordered to specific sizes. Being able to buy wallboard in different sizes reduces building costs substantially.)

A. Standard thicknesses

INFORMATION SHEET

(NOTE: The 1/2-inch and 5/8-inch thicknesses are the most commonly used sizes.)

1. 1/4 inch
2. 3/8 inch
3. 1/2 inch
4. 5/8 inch
5. 1 inch

B. Standard width—4 feet

(NOTE: All gypsum wallboard comes in 4-foot widths.)

C. Standard lengths

1. 4 feet
2. 6 feet
3. 8 feet
4. 10 feet
5. 12 feet
4. 16 feet

IV. Standard edge shapes of gypsum wallboard (Figures 1-5)

A. Tapered

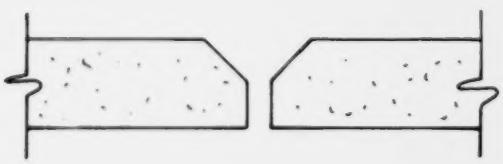
FIGURE 1

B. Square

FIGURE 2

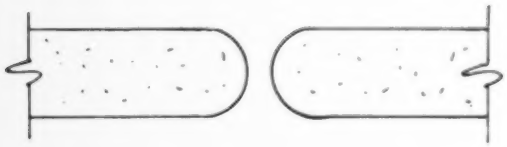
C. Beveled

FIGURE 3



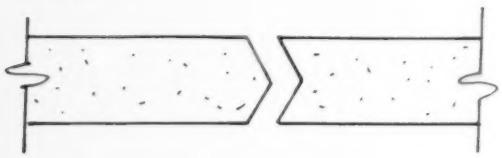
D. Round

FIGURE 4



E. Tongue and groove (T & G)

FIGURE 5



V. Benefits of using gypsum wallboard

A. Is easily applied

B. Is economical

C. Is easily maintained

D. Is easily repaired

E. Is noncombustible

F. Provides a good base for applying finish materials

VI. Types of base or construction where wallboard is used

A. Single layer applied to wood framework

B. Single layer applied to metal framework

C. Single layer applied directly to masonry walls

D. Single layer applied to wood or metal furring strips

E. Single layer used as subflooring

(NOTE: Core board is used as subflooring.)

F. Double layer (two-ply overlay) nailed, screwed, or laminated to base layer

VII. Hardware and fasteners used with gypsum wallboard (Figures 6-22)

A. Hardware

INFORMATION SHEET

1. Metal corner bead

FIGURE 6

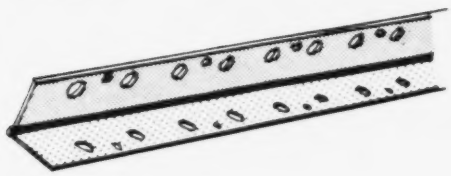


FIGURE 7

2. Metal casing bead

FIGURE 8

FIGURE 9

FIGURE 10

3. Flex-tape corner

FIGURE 11: Flex-tape on roll

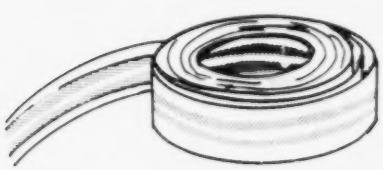
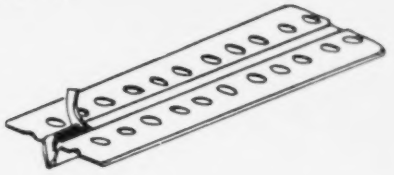


FIGURE 12: Flex-tape shaped into a corner

INFORMATION SHEET

4. Expansion joint

FIGURE 13



5. Molding for predecorated wallboard

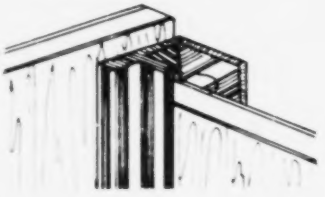
(NOTE: Molding generally matches the colors or patterns used in the pre-decorated wallboard, which is applied to the wall with adhesive or colored nails.)

a. Divider

FIGURE 14

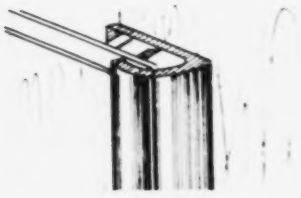
b. Inside corner

FIGURE 15



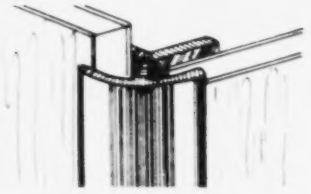
c. End cap

FIGURE 16



d. Outside corner

FIGURE 17



INFORMATION SHEET

B. Fasteners

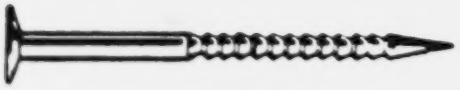
(NOTE: Drywall nails, screws, and staples may be purchased in a variety of sizes and lengths.)

1. Coated nail

FIGURE 18

2. Annular-ring nail

FIGURE 19



3. Phillips-head screw

FIGURE 20

4. Staple

FIGURE 21

FIGURE 22

INFORMATION SHEET

VIII. Other types of materials used with wallboard (Figures 23-28)

A. Ready mix joint compound

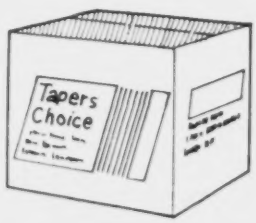
EXAMPLE:

FIGURE 23

B. Dry mix joint compound

EXAMPLE:

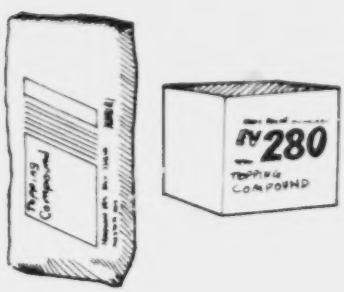
FIGURE 24



C. Dry mix topping compound

EXAMPLE:

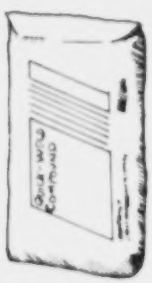
FIGURE 25



D. Quick-weld dry mix joint compound

EXAMPLE:

FIGURE 26

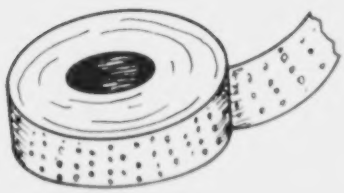


INFORMATION SHEET

E. Perforated joint tape

EXAMPLE:

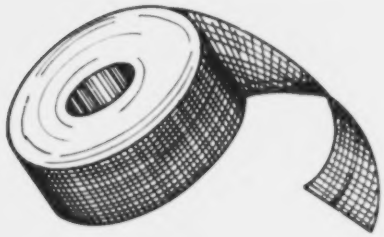
FIGURE 27



F. Self-adhering fiberglass tape

EXAMPLE:

FIGURE 28



IX. Types of finishes that may be applied to gypsum wallboard

A. Paint

B. Wallpaper

C. Texture

D. Paneling

E. Ceramic tile

F. Acoustical tile

G. Predecorated finishes

(NOTE: Predecorated finishes are applied by the manufacturer.)

DRYWALL MATERIALS
UNIT I

TEST

NAME _____ SCORE _____

1. Match terms associated with drywall to their correct definitions. Write the correct numbers in the blanks.

_____a. Compound used to embed perforated tape to wallboard joints, to finish over tape and corner bead, and to finish over nail or screw heads

_____b. Paper tape used as reinforcement at wallboard joints to keep surface from cracking

_____c. Pattern used when two nails are spaced 2 inches apart every 12 inches; pattern used on intermediate joists and studs

_____d. Rigid sheathing material made with a noncombustible core (usually gypsum) that is surfaced with treated paper or some other sheet material; sheathing material applied to interior finish walls and ceilings

_____e. Finish coat of compound that covers all previous coats

_____f. Strips of wood nailed on top of top plate between joists and at inside wall angles of partitions; provides a solid base for nailing wallboard

_____g. Joint compound applied to depression formed by butt joints and tapered wallboard edges

_____h. Place where edges of two pieces of wallboard meet

_____i. Any rigid sheathing material applied to interior finish walls and ceilings

_____j. Impression on wallboard surface formed by a nail driven to proper depth

_____k. To make by uniting two or more layers of material

_____l. Compound specially blended to set in from 20 to 90 minutes; is used almost exclusively in constructing manufactured housing

_____m. To spread joint compound or topping so that it tapers to a thin edge

1. Drywall
2. Wallboard
3. Backing
4. Joint
5. Perforated tape
6. Joint compound
7. Bedding
8. Topping
9. Featheredge
10. Quick-weld compound
11. Dimple
12. Double nailing
13. Laminate

TEST

2. Name five types of gypsum wallboard.

   a. _____

   b. _____

   c. _____

   d. _____

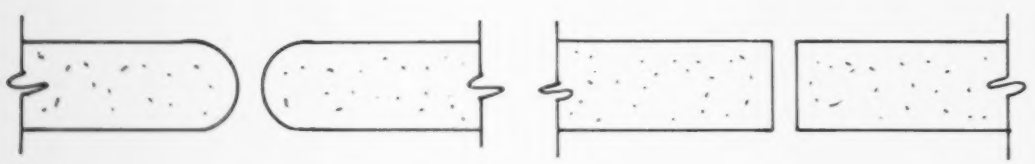
   e. _____

3. Select from the following list standard sizes of gypsum wallboard. Write an "X" in the blank before each correct answer.

_____a. 1/2 inch thick	_____h. 5 feet long
_____b. 6 feet wide	_____i. 4 feet wide
_____c. 4 feet long	_____j. 1 1/4 inches thick
_____d. 5/8 inch thick	_____k. 8 feet long
_____e. 1 inch thick	_____l. 12 feet long
_____f. 1/4 inch thick	_____m. 3/8 inch thick
_____g. 16 inch long	_____n. 10 feet long

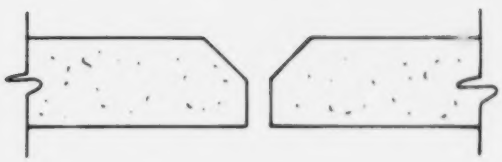
4. Identify the standard edge shapes of gypsum wallboard illustrated below and on the following page. Write the correct names in the blanks.

Tongue and groove (T & G) **Beveled** **Tapered** **Round** **Square**

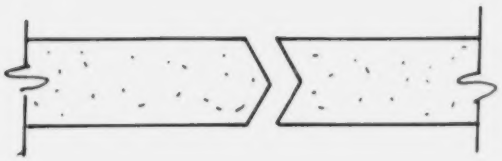


a. _____ b. _____

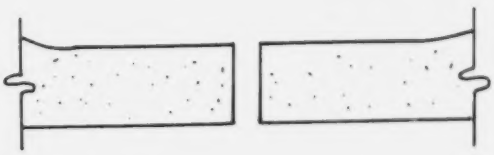
TEST



c. _____



d. _____



e. _____

5. State four benefits of using gypsum wallboard.

   a. _____

   b. _____

   c. _____

   d. _____

6. Describe three types of base or construction where wallboard is used.

   a. _____

   _____

   b. _____

   _____

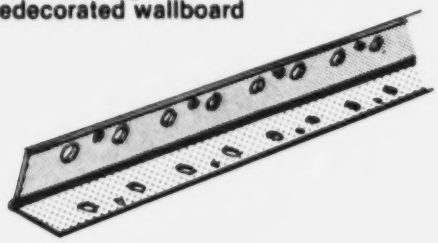
   c. _____

   _____

TEST

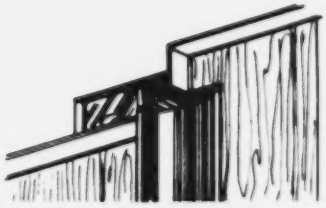
7. Identify the following illustrations of hardware and fasteners used with gypsum wallboard. Write the correct names in the blanks. Some answers will be used more than once.

Outside-corner molding for predecorated wallboard
Phillips-head screw
Coated nail
Annular-ring nail
Divider molding for predecorated wallboard
Metal casing bead
Expansion joint
Staple
Metal corner bead
Flex-tape corner



a. _____

b. _____



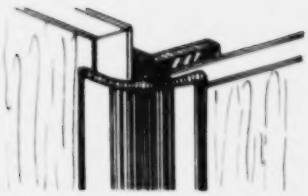
c. _____

d. _____

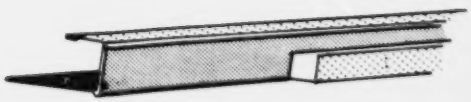
e. _____

f. _____

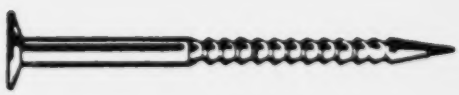
TEST

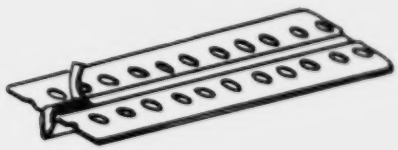


g. _____ h. _____



i. _____ j. _____





k. _____ l. _____

TEST

8. Select from the following list other types of materials used with wallboard. Write an "X" in the blank before each correct answer.

_____a. Masking tape

_____b. Quick-weld dry mix joint compound

_____c. Self-adhering fiberglass tape

_____d. Ready mix cement

_____e. Dry mix joint compound

_____f. Ready mix joint compound

_____g. Dry mix topping compound

9. Select from the following list types of finishes that may be applied to gypsum wallboard. Write an "X" in the blank before each correct answer.

_____a. Acoustical tile

_____b. Paneling

_____c. Quarry tile

_____d. Texture

_____e. Paint

_____f. Plaster

_____g. Predecorated finishes

_____h. Ceramic tile

_____i. Wallpaper

_____j. Plastic laminate

DRYWALL MATERIALS
UNIT I

ANSWERS TO TEST

1. a. 6 d. 2 g. 7 j. 11 m. 9
   b. 5 e. 8 h. 4 k. 13
   c. 12 f. 3 i. 1 l. 10

2. Answer should include any five of the following.

   a. Regular
   b. Type "X"
   c. Insulating
   d. Backing board
   e. Core board
   f. Fire code
   g. Waterproof
   h. Predecorated

3. a, c, d, e, f, i, k, l, m, n

4. a. Round
   b. Square
   c. Beveled
   d. Tongue and groove (T & G)
   e. Tapered

5. Answer should include any four of the following.

   a. Is easily applied
   b. Is economical
   c. Is easily maintained
   d. Is easily repaired
   e. Is noncombustible
   f. Provides a good base for applying finish materials

6. Answer should include any three of the following.

   a. Single layer applied to wood framework
   b. Single layer applied to metal framework
   c. Single layer applied directly to masonry walls
   d. Single layer applied to wood or metal furring strips
   e. Single layer used as subflooring
   f. Double layer (two-ply overlay) nailed, screwed, or laminated to base layer

ANSWERS TO TEST

7. a. Metal corner bead
   b. Staple
   c. Divider molding for predecorated wallboard
   d. Phillips-head screw
   e. Metal casing bead
   f. Coated nail
   g. Outside-corner molding for predecorated wallboard
   h. Metal corner bead
   i. Metal casing bead
   j. Flex-tape corner
   k. Annular-ring nail
   l. Expansion joint

8. b, c, e, f, g

9. a, b, d, e, g, h, i

DRYWALL TOOLS
UNIT II

UNIT OBJECTIVE

After completing this unit, the student should be able to identify drywall tools and equipment and should be able to discuss guidelines for proper care and safe use of the tools. The student will show this ability by completing the unit test with a minimum score of 80 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Match terms associated with drywall tools to their correct definitions.
2. State guidelines for care and safe use of drywall tools.
3. Identify tools, equipment, and accessories used to install drywall.
4. Identify tools and equipment used to finish drywall.

DRYWALL TOOLS
UNIT II

SUGGESTED ACTIVITIES

I. Unit contents

A. Objective sheet

B. Suggested activities

C. Information sheet

D. Test

E. Answers to test

II. Instructor's guide

A. Review unit and plan presentation.

B. Obtain samples of the various tools used to hang drywall and tools used to finish drywall.

C. Introduce unit.

D. Provide students with objective sheet.

E. Discuss unit and specific objectives.

F. Provide students with information sheet.

G. Discuss information sheet.

1. Use Information Sheet, Section I, to discuss terms and definitions associated with drywall tools.

   - Show the class samples of the various terms.

2. Use Information Sheet, Sections II-IV, to discuss guidelines for care and safe use of drywall tools, identification and use of tools.

   - Show the class samples of the various tools listed in the information sheet.
   - Encourage students to buy quality tools.
   - Allow students to handle the tools.

- Have students identify tools and give their ideas of how the tools are used.
- Discuss proper care and safe use of the tools.
- Demonstrate the use of the tools, then allow each student to demonstrate the use of the tools.
- Emphasize tool safety while students are handling tools and demonstrating their uses.

H. Give test.

I. Critique test and discuss in class.

J. Reteach and retest as necessary.

K. Complete appropriate sections of competency profiles.

(NOTE: A master of the competency profile for this book is provided at the front of the instructor edition. You may duplicate the profile and distribute it to students as needed.)

III. Unit references

A. *Goldblatt Tool Catalog*. Kansas City: Goldblatt Tool Company, 1983.

B. Hendrix, Laborn J. "Bud." *Commercial Carpentry*. Stillwater, Oklahoma: Oklahoma State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, and The Associated General Contractors of America, 1986.

DRYWALL TOOLS
UNIT II

INFORMATION SHEET

I. Terms and definitions associated with drywall tools

A. **Outlet cutter** — Tool used to cut out openings in drywall for electrical outlets; available with various size cutter heads

B. **Drywall rasp** — Tool used to smooth rough-cut edges of drywall

C. **Stilts** — Equipment used by drywall workers to elevate the worker to the proper working height

D. **Caulking gun** — Tool used to hold and dispense caulking, sealants, and adhesives from tubes

E. **Drywall foot lift** — Tool designed so one end will fit under edge of drywall and will lift the drywall by putting foot pressure on the opposite end

F. **Taping machine (banjo)** — Equipment used to apply tape and mud to drywall joints

II. Guidelines for care and safe use of drywall tools

A. Stay alert when using tools

EXAMPLES: Keep fingers away from cutting edges; work away from your body when using cutting tools.

B. Store tools properly when not in use

EXAMPLES: Do not carry tools in your pocket; do not place tools on anything where they can roll off; protect cutting edges; lightly oil tools before storing; store tools in dry place.

C. Use the correct tool for the job

D. Keep tools sharp

E. Keep tools clean

F. Repair broken or damaged tools promptly

G. Dispose of broken or damaged tools that cannot be repaired

H. Inspect tools frequently to make sure they are in good condition

I. Wear eye protection and approved respirators when necessary

J. Lift heavy objects properly

INFORMATION SHEET

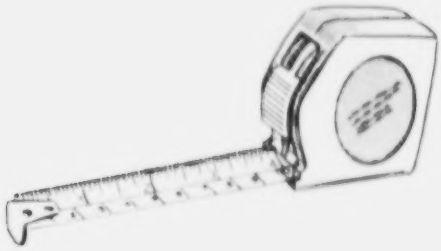
III. Tools, equipment, and accessories used to install drywall (Figures 1-20)

A. Folding rule

FIGURE 1

B. Steel tape

FIGURE 2



C. Divider

FIGURE 3

D. Scribe

FIGURE 4

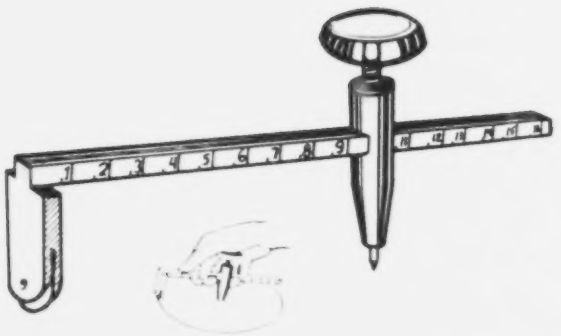
INFORMATION SHEET

E. Drywall T-square

FIGURE 5

F. Circle cutter

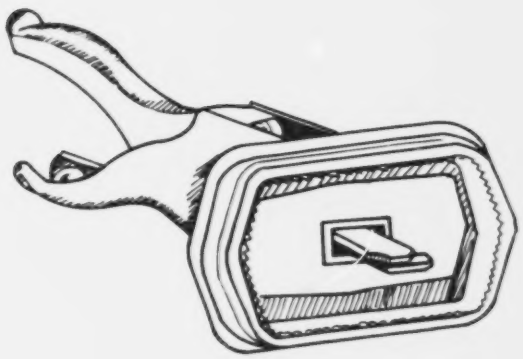
FIGURE 6



INFORMATION SHEET

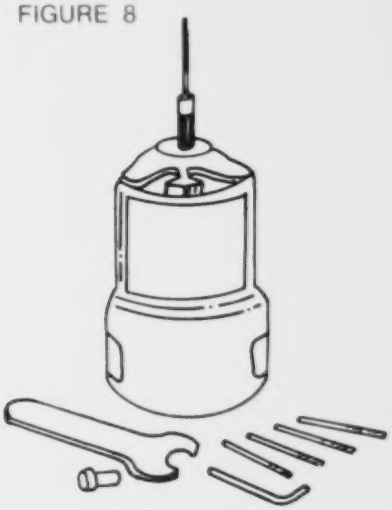
G. Outlet cutter

FIGURE 7



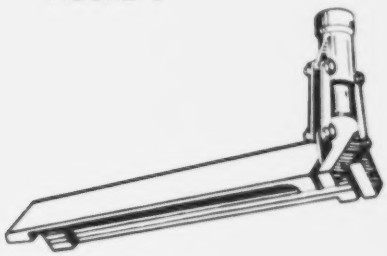
H. Ream machine

FIGURE 8



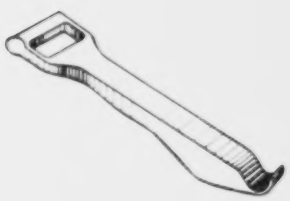
I. Cornerbead clincher

FIGURE 9



J. Carrier/lifter

FIGURE 10



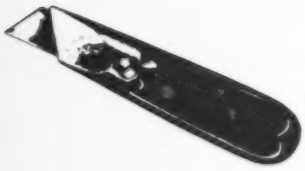
INFORMATION SHEET

K. Drywall lift

FIGURE 11

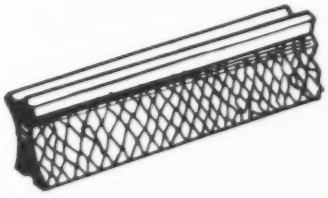
L. Utility knife

FIGURE 12



M. Drywall rasp

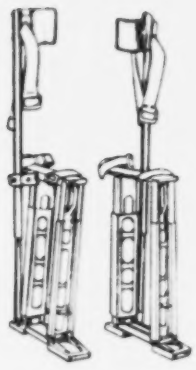
FIGURE 13



INFORMATION SHEET

N. Stilts

FIGURE 14



O. Drywall foot lift

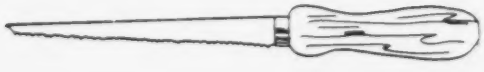
FIGURE 15

P. Drywall hammer

FIGURE 16

Q. Utility saw

FIGURE 17

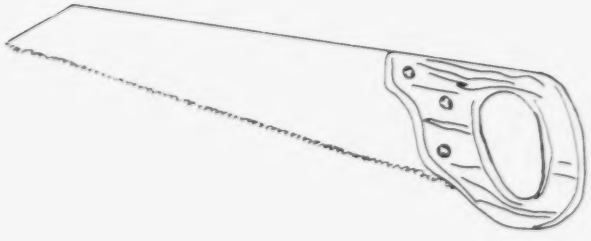


R. Caulking gun

FIGURE 18

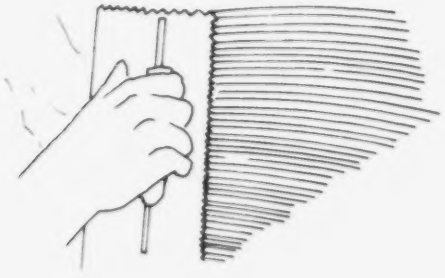
S. Wallboard saw

FIGURE 19



T. Adhesive spreader

FIGURE 20

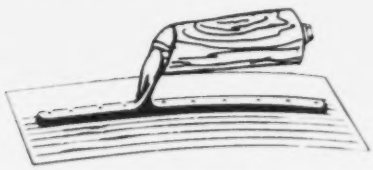


INFORMATION SHEET

IV. Tools and equipment used to finish drywall (Figures 21-34)

A. Drywall trowel

FIGURE 21

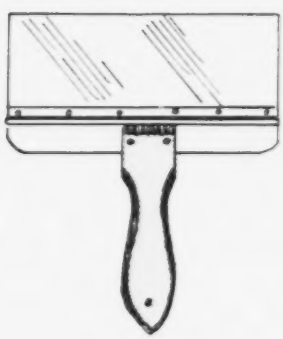


B. Mud pan

FIGURE 22

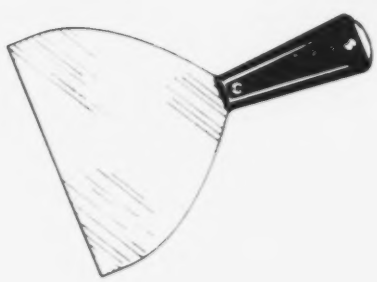
C. Taping knife

FIGURE 23



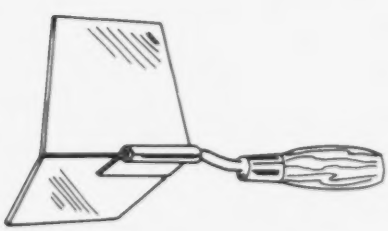
D. Elastic knife

FIGURE 24



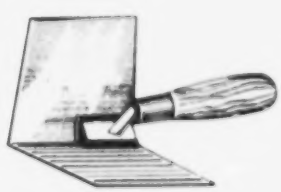
E. Outside-corner taping tool

FIGURE 25



F. Inside-corner taping tool

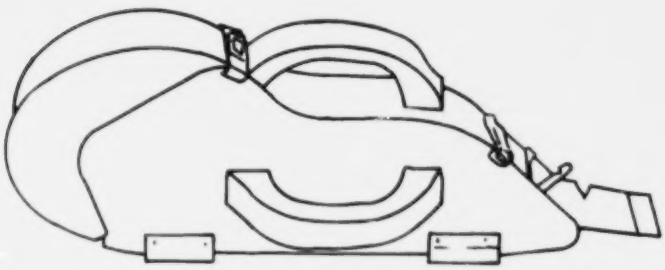
FIGURE 26



INFORMATION SHEET

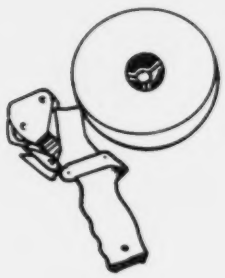
G. Taping machine (banjo)

FIGURE 27



H. Hand tape gun

FIGURE 28

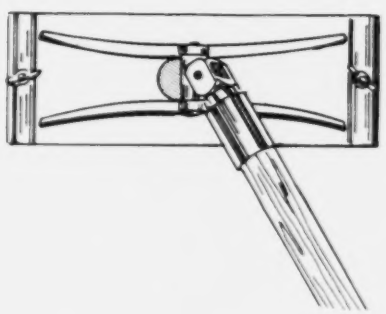


I. Hand sander

FIGURE 29

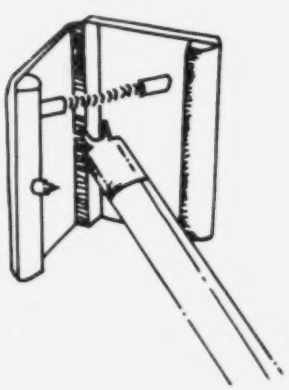
J. Long-handled sander

FIGURE 30



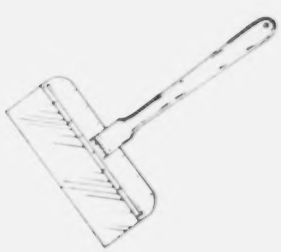
K. Long-handled corner sander

FIGURE 31



L. Offset handle finishing knife

FIGURE 32



INFORMATION SHEET

M. Texture brush

FIGURE 33

N. Stippling brush

FIGURE 34

DRYWALL TOOLS
UNIT II

TEST

NAME _____ SCORE _____

1. Match terms associated with drywall tools to their correct definitions. Write the correct numbers in the blanks.

_____a.	Tool used to smooth rough-cut edges of drywall	1. Stilts
_____b.	Tool designed so one end will fit under edge of drywall and will lift the drywall by putting foot pressure on the opposite end	2. Caulking gun
_____c.	Equipment used by drywall workers to elevate the worker to the proper working height	3. Outlet cutter
_____d.	Tool used to cut out openings in drywall for electrical outlets, available with various size cutter heads	4. Drywall rasp
_____e.	Equipment used to apply tape and mud to drywall joints	5. Taping machine (banjo)
_____f.	Tool used to hold and dispense caulking, sealants and adhesives from tubes	6. Drywall foot lift

2. State five guidelines for care and safe use of drywall tools.

a. _____

_____

b. _____

_____

c. _____

_____

d. _____

_____

e. _____

_____

TEST

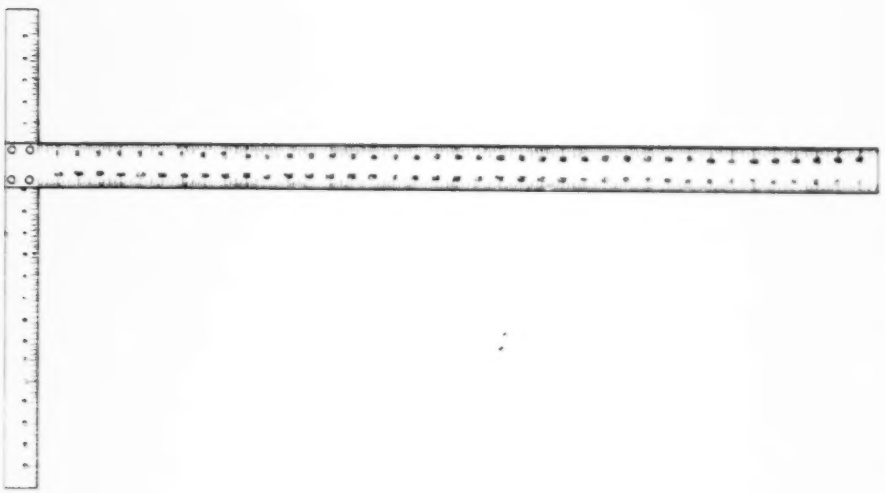
3. Identify the tools, equipment, and accessories used to install drywall illustrated below. Write the correct names in the blanks.

Drywall lift	**Folding rule**	**Wallboard saw**	**Drywall hammer**	**Stilts**
Outlet cutter	**Steel tape**	**Caulking gun**	**Drywall foot lift**	**Scribe**
Drywall rasp	**Utility saw**	**Utility knife**	**Drywall T-square**	**Divider**
Circle cutter	**Ream machine**	**Carrier/lifter**	**Cornerbead clincher**	**Adhesive spreader**

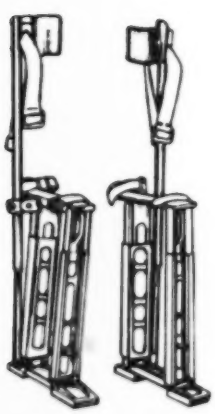
a. _____ b. _____

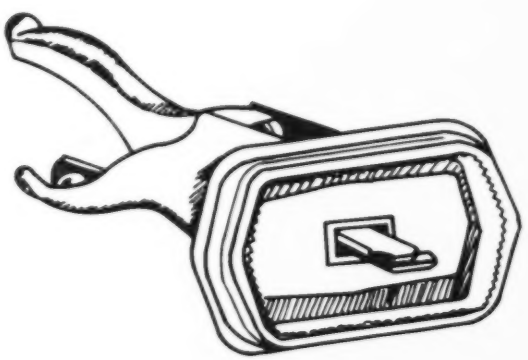
c. _____ d. _____

TEST



e. _____

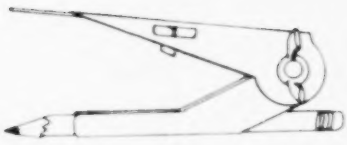


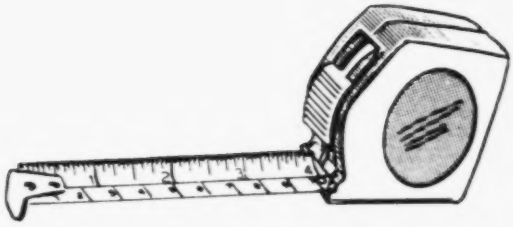


f. _____ g. _____

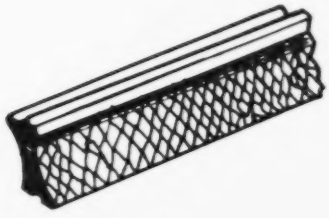
TEST

h. _____



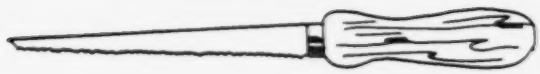


i. _____ j. _____

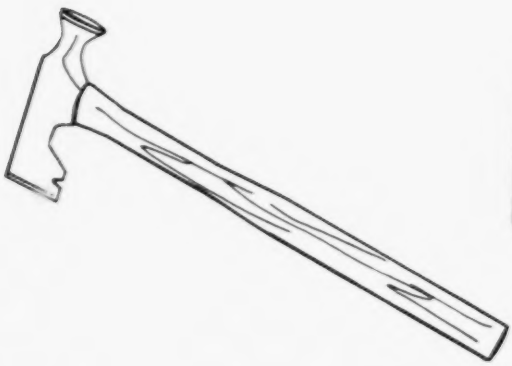


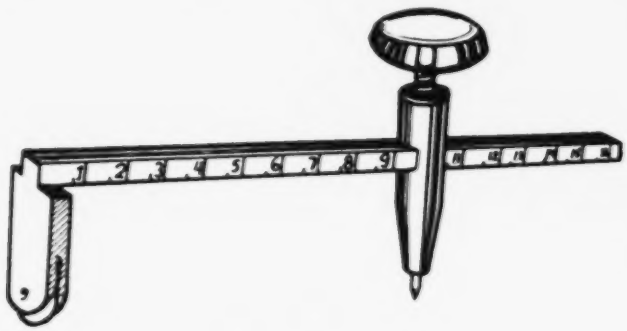
k. _____ l. _____

TEST



m. _____ n. _____

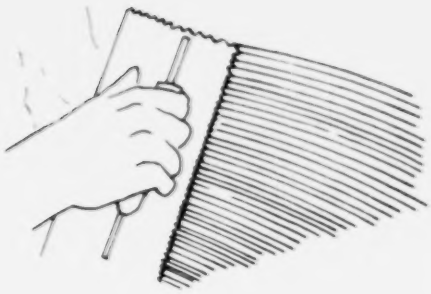




o. _____ p. _____

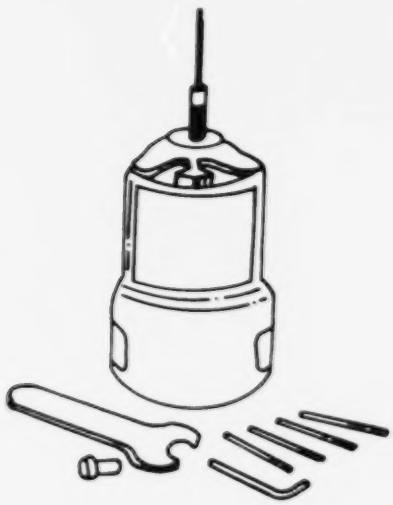
TEST

q. _____



r. _____

s. _____

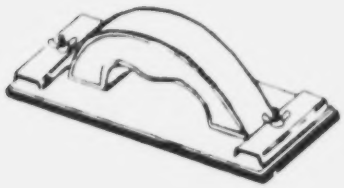


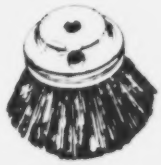
t. _____

TEST

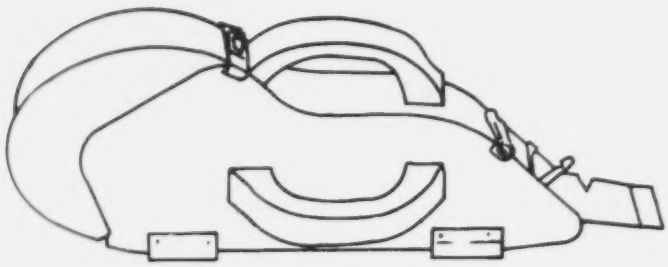
4. Identify the tools and equipment used to finish drywall illustrated below. Write the correct names in the blanks.

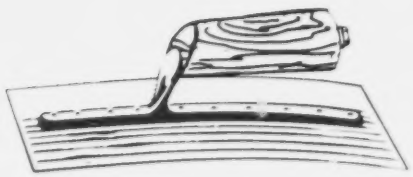
Long-handled corner sander	**Hand tape gun**	**Outside-corner taping tool**
Drywall trowel	**Mud pan**	**Inside-corner taping tool**
Elastic knife	**Long-handled sander**	**Taping knife**
Hand sander	**Texture brush**	**Taping machine (banjo)**
Offset handle finishing knife	**Stippling brush**	





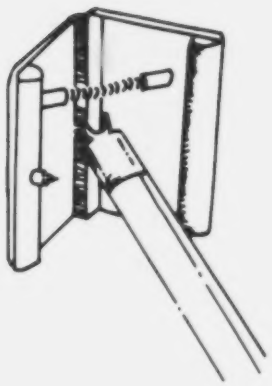
a. _____ b. _____





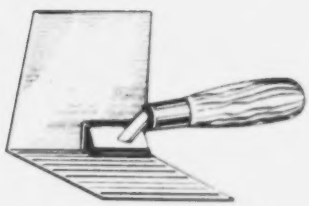
c. _____ d. _____

TEST

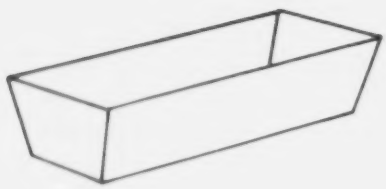


e. _____

f. _____

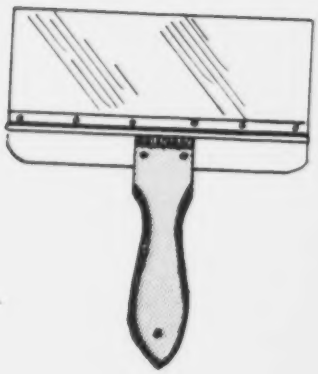


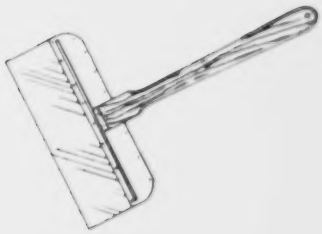
g. _____



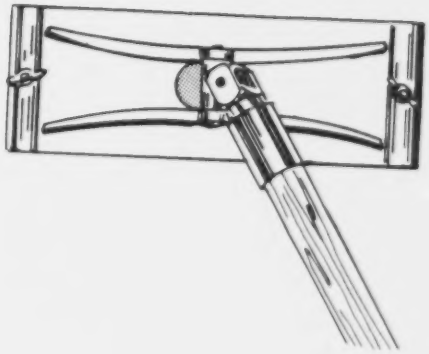
h. _____

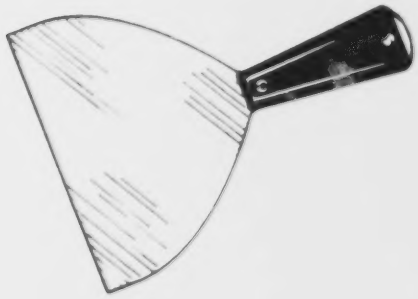
TEST





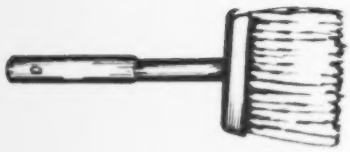
i. _____ j. _____

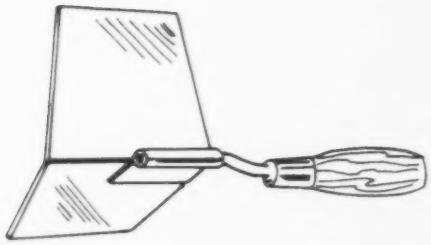




k. _____ l. _____

TEST





m. _____ n. _____

DRYWALL TOOLS
UNIT II

ANSWERS TO TEST

1. a. 4 c. 1 e. 5
   b. 6 d. 3 f. 2

2. Answer should include any five of the following.

   a. Stay alert when using tools
   b. Store tools properly when not in use
   c. Use the correct tool for the job
   d. Keep tools sharp
   e. Keep tools clean
   f. Repair broken or damaged tools promptly
   g. Dispose of broken or damaged tools that cannot be repaired
   h. Inspect tools frequently to make sure they are in good condition
   i. Wear eye protection and approved respirators when necessary
   j. Lift heavy objects properly

3. a. Drywall lift
   b. Divider
   c. Folding rule
   d. Utility knife
   e. Drywall T-square
   f. Stilts
   g. Outlet cutter
   h. Wallboard saw
   i. Scribe
   j. Steel tape
   k. Drywall rasp
   l. Drywall foot lift
   m. Caulking gun
   n. Utility saw
   o. Drywall hammer
   p. Circle cutter
   q. Cornerbead clincher
   r. Adhesive spreader
   s. Carrier/lifter
   t. Ream machine

4. a. Hand sander
   b. Stippling brush
   c. Taping machine (banjo)
   d. Drywall trowel
   e. Long-handled corner sander
   f. Hand tape gun
   g. Inside-corner taping tool
   h. Mud pan
   i. Taping knife
   j. Offset handle finishing knife
   k. Long-handled sander
   l. Elastic knife
   m. Texture brush
   n. Outside-corner taping tool

DRYWALL LAYOUT AND BASIC SKILLS
UNIT III

UNIT OBJECTIVE

After completing this unit, the student should be able to discuss skills and methods used to install drywall and should also be able to perform a check list prior to drywall installation. The student will show this ability by completing the job sheets and the unit test with a minimum score of 80 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Match terms associated with drywall layout and basic skills to their correct definitions.
2. Select from a list skills pertaining to drywall installation.
3. Select from a list methods used to apply drywall.
4. State items to look for when inspecting a job prior to installing drywall.
5. State guidelines for installing drywall.
6. Demonstrate the ability to
   a. Install gypsum wallboard.
   b. Finish wallboard surface.
   c. Apply laminated gypsum wallboard.
   d. Install predecorated wallboard.

DRYWALL LAYOUT AND BASIC SKILLS
UNIT III

SUGGESTED ACTIVITIES

I. Unit contents

- A. Objective sheet
- B. Suggested activities
- C. Transparency masters
  1. TM #1 — Planning the Job
  2. TM #2 — Tools Required
  3. TM #3 — Cutting Gypsum Wallboard
  4. TM #4 — Ceiling Installation
  5. TM #5 — Wall Application
  6. TM #6 — Metal Corner Bead
  7. TM #7 — Joint Finishing
  8. TM #8 — Applying Bedding Compound
  9. TM #9 — Applying Wallboard Tape
  10. TM #10 — Applying Finishing Coats
  11. TM #11 — Finishing Nailheads
  12. TM #12 — Finishing End Joints
  13. TM #13 — Finishing Metal Corner Bead
- D. Information sheet
- E. Job sheets
  1. Job Sheet #1 — Install Gypsum Wallboard
  2. Job Sheet #2 — Finish Wallboard Surface
  3. Job Sheet #3 — Apply Laminated Gypsum Wallboard
  4. Job Sheet #4 — Install Predecorated Wallboard
- F. Test
- G. Answers to test

II. Instructor's guide

SUGGESTED ACTIVITIES

A. Review unit and plan presentation.

B. Obtain materials to supplement unit.

1. Cutaway of a wall section showing drywall installation
2. Samples of the various types of wallboard
3. Literature from gypsum wallboard manufacturers

C. Introduce unit to students.

- Invite a former student or another drywall installer to talk to the class about their job and training.
- Take a field trip to a construction site so students may observe drywall being installed and finished.

D. Provide students with objective sheet.

E. Discuss unit and specific objectives.

F. Provide students with information and job sheets.

G. Discuss information and job sheets.

1. Use Information Sheet, Section I, to discuss terms and definitions associated with drywall layout and basic skills.
   - Show students samples of terms.
   - Show students a cutaway wall section with the drywall at various stages of installation to illustrate terms.
   - Make copies of transparencies and hand out to the students.
2. Use Information Sheet, Sections II and III, to discuss skills necessary for drywall installation and methods used to apply drywall.
   - Discuss the different basic skills such as using a rule and tape, using a utility knife and saw to cut, using hammer and hatchet, using the various trowels and knives and using the sanders.
   - Relate the skills listed to the procedures in the job sheets.
   - Visit a construction site where drywall installation is in progress; have the students point out the methods used for installation and the different skills used.
3. Use Information Sheet, Section IV, to discuss items to look for when inspecting a job prior to installing drywall.
   - Make up a checklist with blanks for students to perform and check off each item that must be completed prior to drywall installation.

SUGGESTED ACTIVITIES

4. Use Information Sheet, Section V, to discuss guidelines for installing drywall.

   - Discuss the various guidelines listed, then ask students to try to add to this list.
   - Take a field trip to a construction site and while observing the workmen and skills being performed have students list the different guidelines being used by the workers, also make a list of other guidelines that are not in our list.

H. Use Transparencies #1 through #13 to discuss the procedures for installing and finishing drywall. Relate these procedures to the ones in the job sheets. Emphasize careful handling of drywall and safety requirements due to size and weight of the materials. Also stress tool safety.

I. Discuss and demonstrate procedures in the job sheets.

J. Have students complete Job Sheets #1 through #4.

K. Give test.

L. Critique test and discuss in class.

M. Reteach and retest as necessary.

N. Complete appropriate sections of competency profiles.

(NOTE: A master of the competency profile for this book is provided at the front of the instructor edition. You may duplicate the profile and distribute it to students as needed.)

III. Unit references

A. *Gypsum Construction Handbook*, 2nd ed., Chicago, Illinois: United States Gypsum Company, 1982.

B. Hendrix, Laborn J. "Bud." *Commercial Carpentry*. Stillwater, Oklahoma: Oklahoma State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, and The Associated General Contractors of America, 1986.

1 Planning the Job

A little thought and planning before you start your project can result in a better-appearing job and a savings in materials and time. Make a sketch of the areas to be surfaced with gypsum wallboard and lay out the board panels. Install the boards across (perpendicular to) the joists or studs. Use as long a board as can be handled to eliminate or reduce end joints. For example, in a 12′ × 13′ room where the ceiling joists run parallel to the 13-foot dimension, it is desirable to have the boards be 12 feet long. If they are 8 feet long, an end joint would be necessary in each course. Where end joints cannot be avoided, they should be staggered.

It is usually better to apply the board on the ceiling first, then the sidewalls.

It is often easier to use the adhesive nail-on method of application. This method results in fewer nails to drive and conceal and makes a higher-quality installation.

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2 Tools Required

The basic tools you need are

1. Wallboard cutting knife and heavy-duty knife blade
2. Wallboard hammer or regular crown-head carpenter's claw hammer
3. 4-foot T-square or steel straightedge
4. Steel tape measure
5. Utility saw or keyhole saw
6. Joint-finishing knives with 4-inch and 10-inch blades
7. Plastic pan for joint compound
8. Sandpaper (medium texture) for joint finishing
9. Caulking gun

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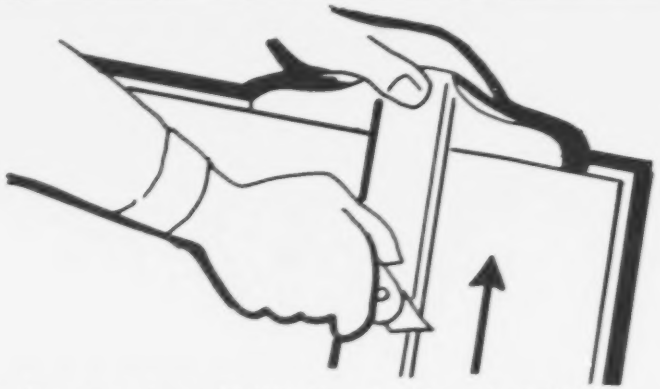
3 Cutting Gypsum Wallboard



Use T-square and wallboard knife for scoring. With the knife at right angles to the board, score completely through the face paper. Then apply firm, even pressure to snap the board. Fold back the partially separated portion of the board and use the knife again to cut the back paper. Rough edges should be smoothed. Panels can be cut with a saw if desired.

Cutting Openings

It will be necessary to cut holes in the wallboard for electrical outlets, light receptacles, etc. The distance of the opening from the end and edge of the board should be carefully measured and marked on the face of the wallboard. The opening should then be outlined in pencil and cut out with a keyhole saw. The cutout must be accurate or the cover plate will not conceal the hole.

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4 Ceiling Installation

It is more difficult to install the ceiling boards because of the overhead positioning. It is desirable to have T-braces to hold the board in place while it is being nailed. A satisfactory T-brace consists of a 2-foot piece of 1×4 nailed onto the end of a 2×4. The length should be about 1 inch longer than the floor-to-ceiling height. The nails should be 7 inches apart. When the adhesive nail-on method is used, the edges should be nailed, but place only one nail per joist in the field of the board. All edges should be supported on framing. The nails should be driven to bring the board tight to the framing, then another blow struck to dimple the nail, being careful not to break the face paper.

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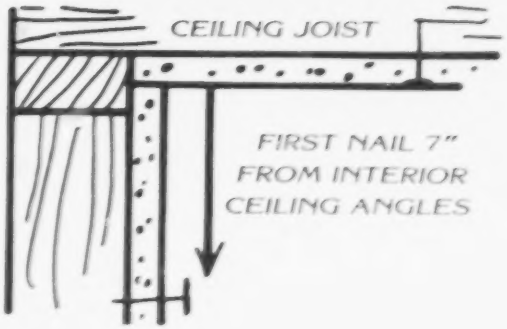
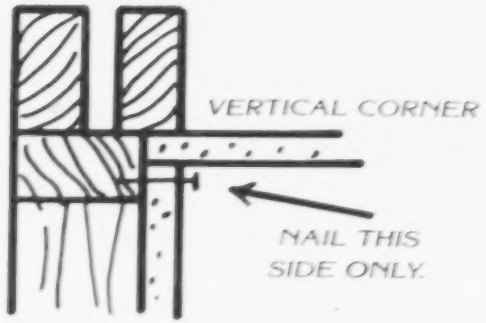
5 Wall Application





In horizontal application on sidewalls, install the top board first. Push the board up firmly against the ceiling and nail, placing nails 7 inches apart. One exception, however, is to keep all nails back 7 inches from interior ceiling angles. Nails in the interior angles are quite apt to pop. If the adhesive nail-on method is used, all of the field nailing can be eliminated. The nailing is around the edges of the board. If the board is bowed out in the center, it may be advisable to secure it with a temporary nail until the adhesive sets.

A vertical application places the long edges of the wallboard parallel to the framing members. This is more desirable if the ceiling height of your wall is greater than 8′-2″ or the wall is 4 feet wide or less. Nailing recommendations are the same as for horizontal application.

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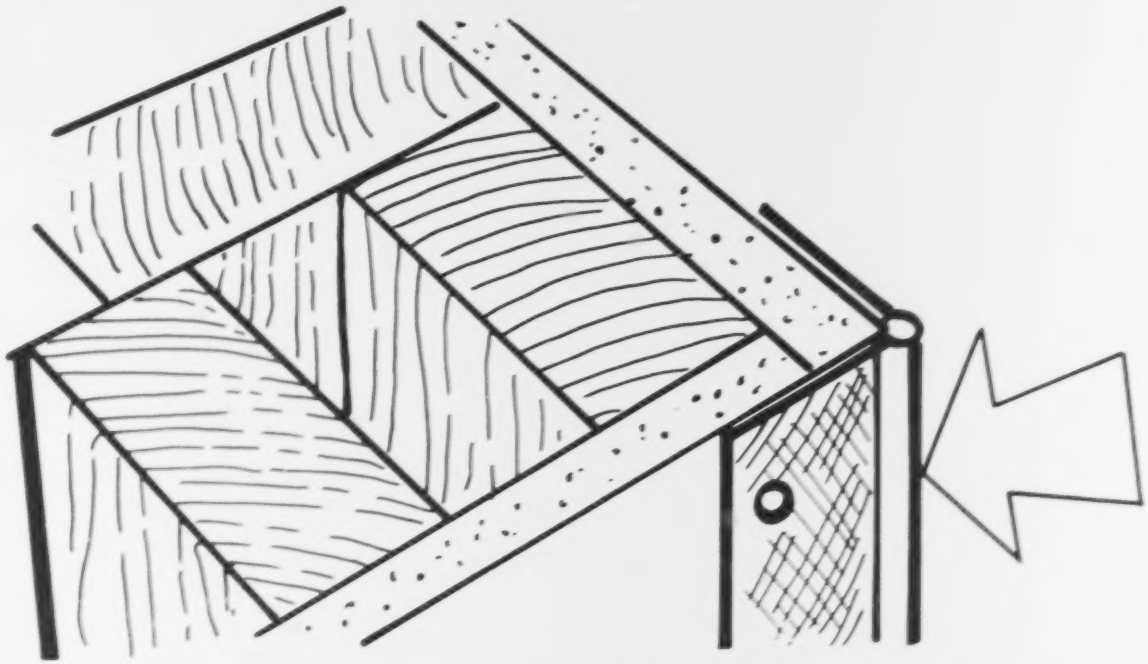
6 Metal Corner Bead



To protect corners from edge damage, install metal corner bead after you have installed the wallboard. Nail the metal corner bead every 5 inches through gypsumboard into wood framing.

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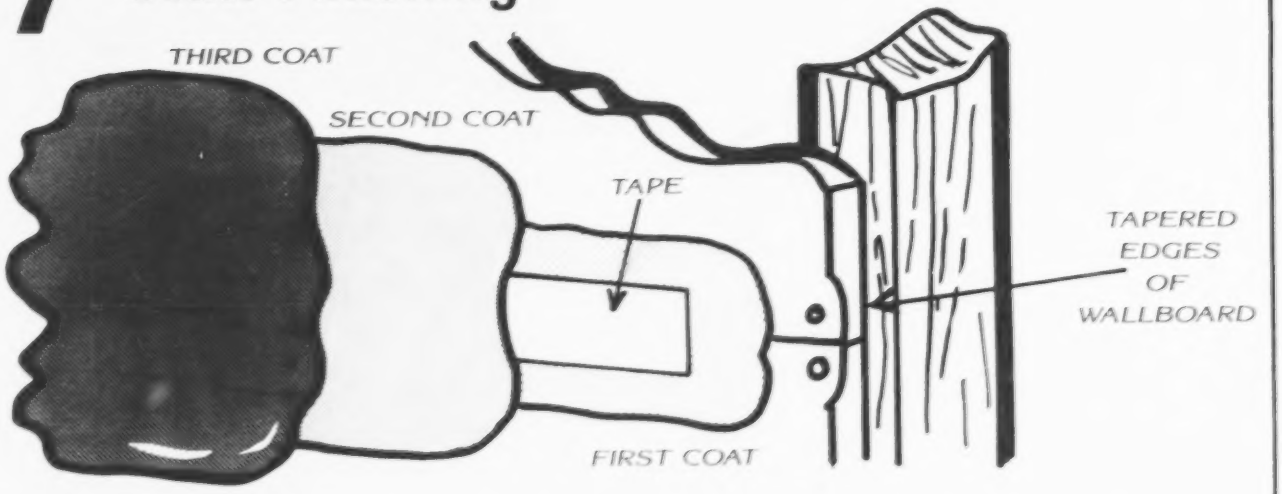
7 Joint Finishing



A premixed material such as G-P Ready-Mix joint compound is the easiest to use to finish joints, corners, and nailheads. A minimum of three coats of Ready-Mix is recommended for all taped joints. This includes an embedding coat to bond the tape and two finishing coats over the tape. Each coat should dry thoroughly, usually twenty-four hours, so that the surface can be easily sanded. When sanding, wrap your sandpaper around a wood sanding block so you sand the surface evenly. Do not over-sand or sand the paper surface. This may outline the joint or nailhead through the paint.

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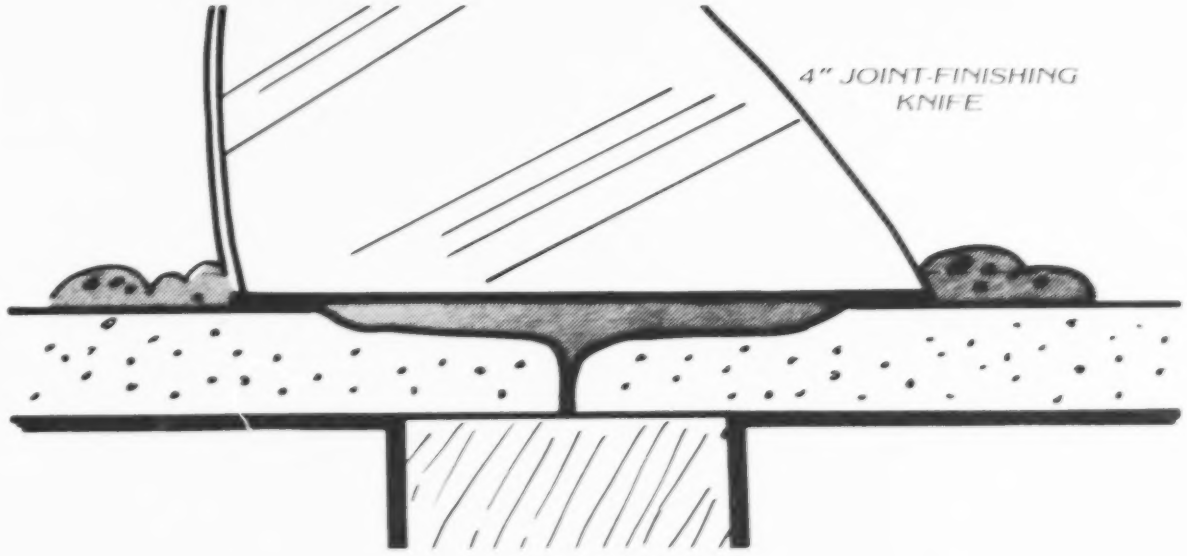
8 Applying Bedding Compound



Take your 4-inch joint-finishing knife and apply the Ready-Mix joint compound fully and evenly into the slight recess created by the adjoining edges of the board.

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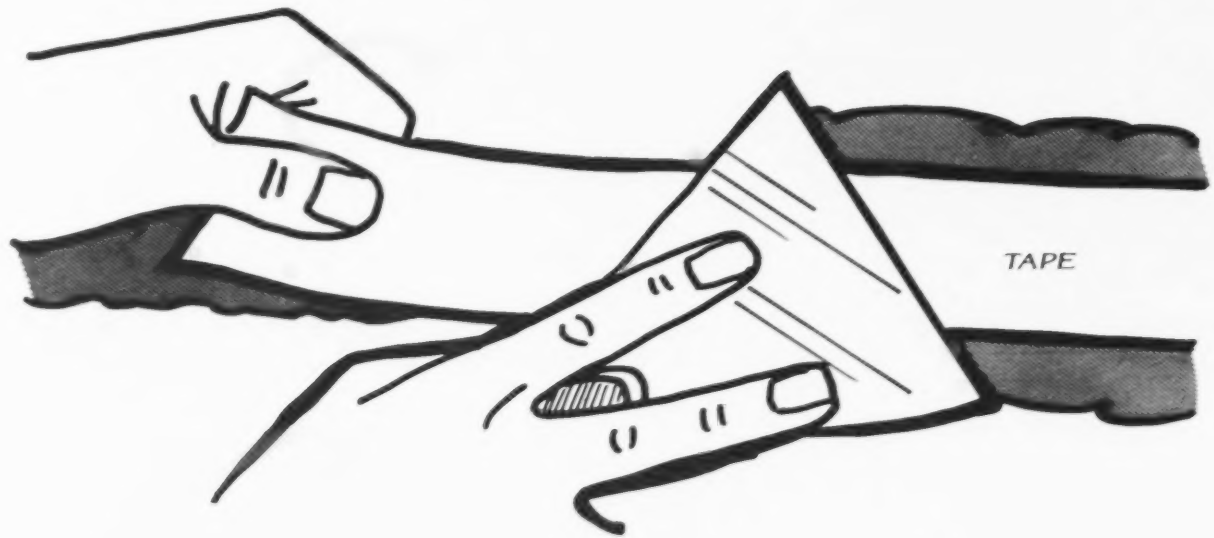
9 Applying Wallboard Tape



Next, take your wallboard tape and center it over the joint. Press the tape firmly into the bedding compound with your wallboard knife held at a 45-degree angle. The pressure should squeeze some compound from under the tape, but enough must be left for a good bond.

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10 Applying Finishing Coats

When thoroughly dry, at least twenty-four hours, apply a fill coat extending a few inches beyond the edge of the tape, and feather the edges of the compound. When the first finishing coat is thoroughly dry, use your 10-inch joint-finishing knife to apply a second coat, and feather the edges about 1½ inches beyond the first coat. When this coat is dry, sand lightly to a smooth, even surface. Wipe off the dust in preparation for the final decoration. Total width should be 12 to 14 inches.

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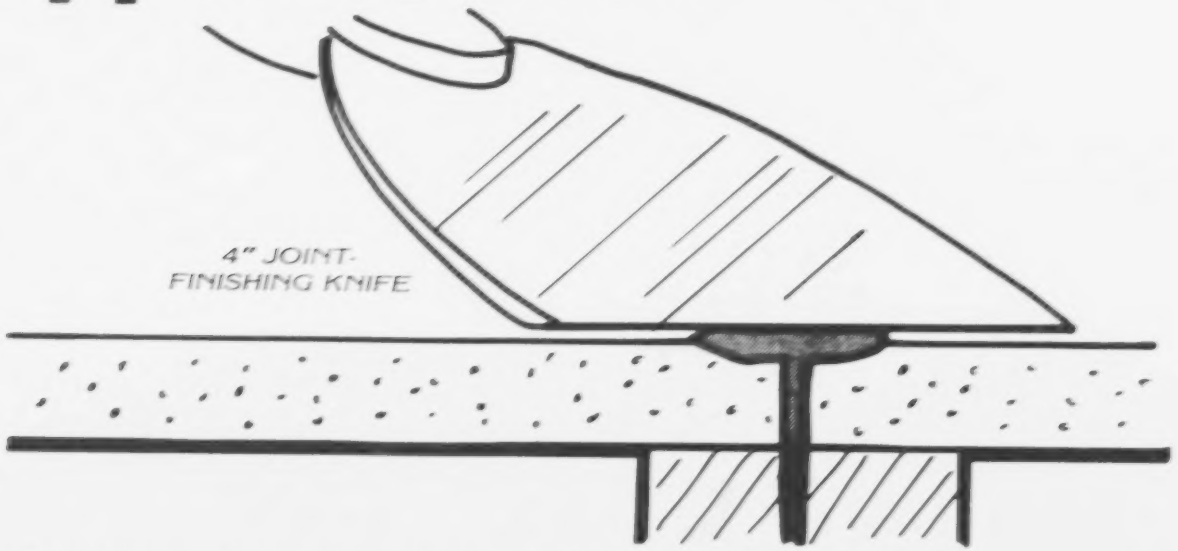
11 Finishing Nailheads



Draw your 4-inch joint-finishing knife across nails to be sure they are below the surface of the board. Apply first coat of Ready-Mix with even pressure to smooth compound level with the surface of the board. Do not bow knife blade with excess pressure as this tends to scoop compound from dimpled area. When dry, apply second coat; let dry; sand lightly, and apply third coat. Sand lightly before applying your decoration. An additional coat may be needed, depending on temperature and humidity.

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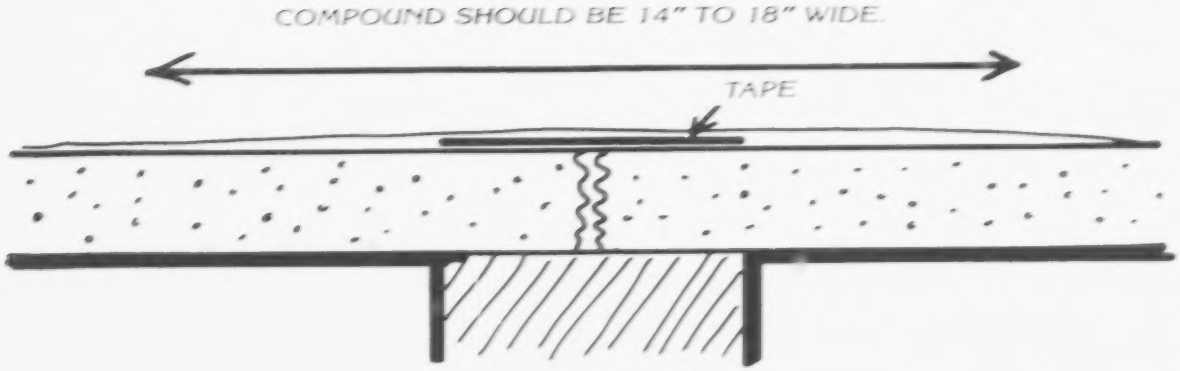
12 Finishing End Joints



You use basically the same steps with end or butt joints as you do with tapered edges. The end joints are not tapered, so care must be taken not to build up the compound in the center of the joint. This encourages ridging and shadowed areas. Feather the compound well out on each side of the joint. Final application of joint compound should be 14 to 18 inches wide.

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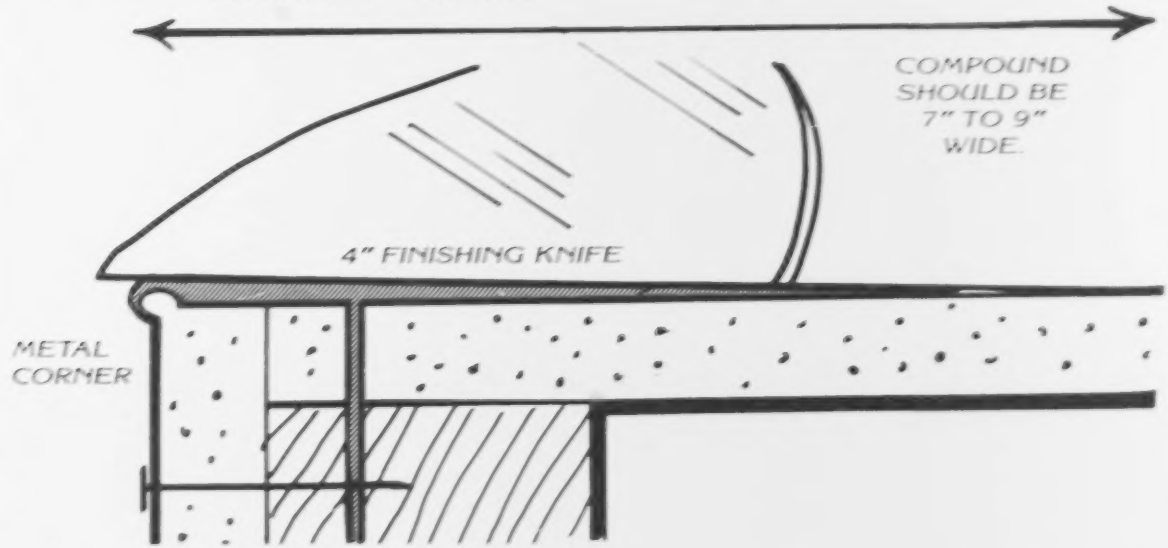
13 Finishing Metal Corner Bead



Be sure the metal corner is attached firmly. Take your 4-inch finishing knife and spread the G-P Ready-Mix 3 to 4 inches wide from the nose of the bead, covering the metal edges. When completely dry, sand lightly and apply second coat, feathering edges 2 to 3 inches beyond the first coat. A third coat may be needed, depending on your coverage. Feather the edges of each coat 2 or 3 inches beyond the preceding coat.

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DRYWALL LAYOUT AND BASIC SKILLS
UNIT III

INFORMATION SHEET

I. Terms and definitions associated with drywall layout and basic skills

A. **Layout** — Detailed plan, design, or arrangement of a project

B. **Drywall** — Any rigid sheathing material applied to interior finish walls and ceilings

C. **Wallboard** — Rigid sheathing material made with a noncombustible core (usually gypsum) that is surfaced with treated paper or some other sheet material; sheathing material applied to interior finish walls and ceilings

D. **Backing** — Strips of wood nailed on top of top plate between joists and at inside wall angles of partitions; provides a solid base for nailing wallboard

E. **Joint** — Place where edges of two pieces of wallboard meet

F. **Perforated tape** — Paper tape used as reinforcement at wallboard joints to keep surface from cracking

G. **Bedding** — Joint compound applied to depression formed by butt joints and tapered wallboard edges

H. **Joint compound** — Compound used to embed perforated tape to wallboard joints, to finish over tape and corner bead, and to finish over nail or screw heads

I. **Topping** — Finish coat of compound that covers all previous coats

J. **Quick-weld compound** — Compound specially blended to set in from 20 to 90 minutes

K. **Featheredge** — To spread joint compound or topping so that it tapers to a thin edge

L. **Dimple** — Impression on wallboard surface formed by a nail driven to proper depth

M. **Double nailing** — Pattern used when two nails are spaced 2 inches apart every 12 inches; pattern used on intermediate joists and studs

N. **Laminate** — To make by uniting two or more layers of material

O. **Scribe** — Adjustable tool used to make irregular parallel marks on an object for cutting and fitting a piece of material

INFORMATION SHEET

F. **Cutouts** — Openings that are made for convenience of access to other areas

EXAMPLES: Windows, doors, electrical outlets and switches, pipes, and ducts

II. Skills pertaining to drywall installation

A. Measure and level

B. Cut drywall using knife or saw

C. Install drywall using hammer and nails, screw gun, or adhesive

D. Install corner beads using hammer and nails or stapler

E. Bed and tape joints and internal corners

F. Fill nail or screw depressions

G. Apply finish coat

H. Sand finish surface

III. Methods used to apply drywall

A. Nailing method

B. Adhesive method

C. Nailing and adhesive method

D. Double nailing method

E. Screw method

F. Stapling method

IV. Items to look for when inspecting a job prior to installing drywall

A. Ceiling backing been installed

B. Walls and studs straight

C. Blocking for cabinets, sinks, and bath fixtures been installed

D. Electrical rough-in completed

E. Plumbing rough-in completed

F. Heating vent and air conditioning rough-in completed

INFORMATION SHEET

G. Exterior wall insulation been installed

H. All inspections been made and approved

V. Guidelines for installing drywall

A. Always apply ceiling drywall before applying drywall to walls

B. Always apply drywall at right angle to ceiling joist

C. Whenever possible, install drywall horizontally on walls

D. Cut openings for fixtures no more than ⅛ inch larger than fixture

E. Plan installation so that vertical joints are above door and window openings whenever practical

F. Joints should be at least 6 inches from end of headers to reduce cracking and joint treatment

G. When sanding surface of drywall, do not damage the face of the drywall

H. Stagger panels on opposite side of wall so that joints occur on different studs

DRYWALL LAYOUT AND BASIC SKILLS
UNIT III

JOB SHEET #1 — INSTALL GYPSUM WALLBOARD

I. Tools and equipment

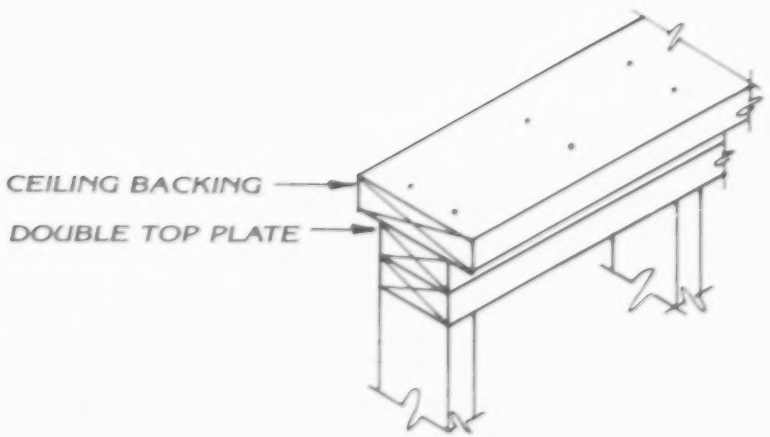
A. Drywall hatchet or hammer
B. Folding rule or steel tape
C. Nail pouch
D. Utility knife
E. Drywall T-square
F. Drywall saw
G. Drywall foot lift
H. Drywall keyhole saw
I. Surform tool
J. Wallboard
K. Nails
L. Metal corners
M. 2 x 4's for ceiling Ts

II. Procedure for ceiling installation

A. Preparing for installation

1. Install backing along top plate if it has not already been installed (Figure 1)

FIGURE 1

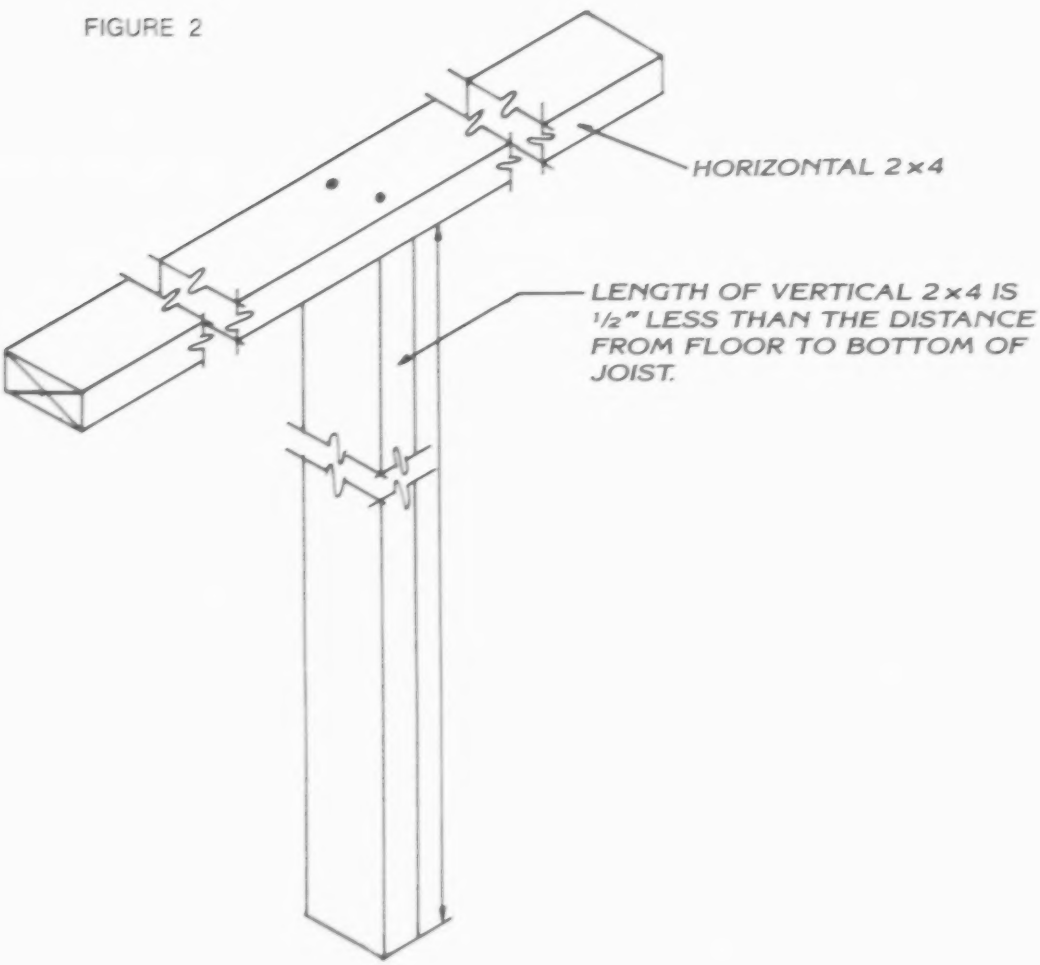


JOB SHEET #1

2. Construct two or more ceiling Ts from 2×4s, making the vertical member ½ inch shorter than the distance from the floor to the bottom of the joist (Figure 2)

   (NOTE: Ceiling Ts are used to support the ceiling wallboard during nailing.)

FIGURE 2

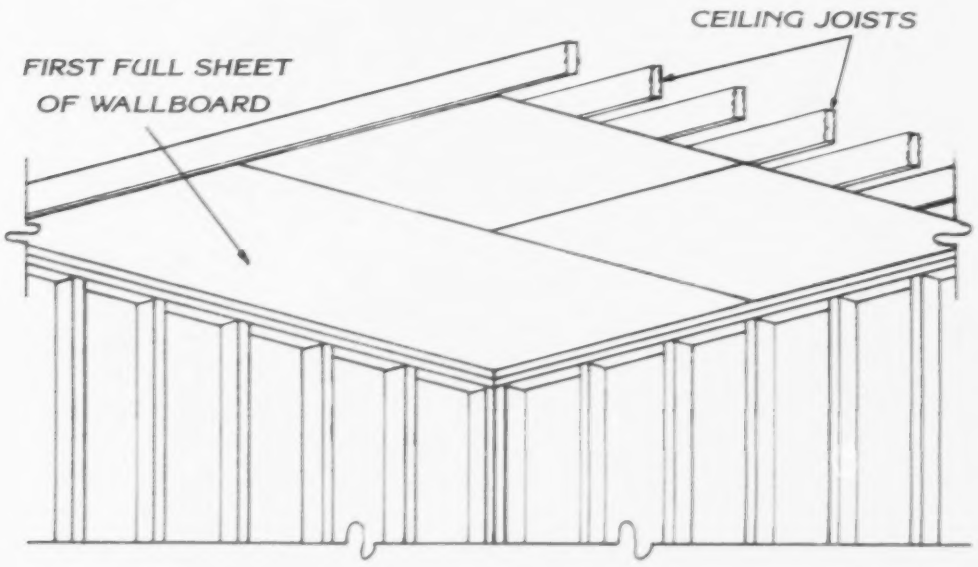


JOB SHEET #1

B. Installing first full sheet of ceiling wallboard

1. Beginning in a corner, position full sheet of wallboard at right angle to ceiling joists (See Figure 3)

FIGURE 3



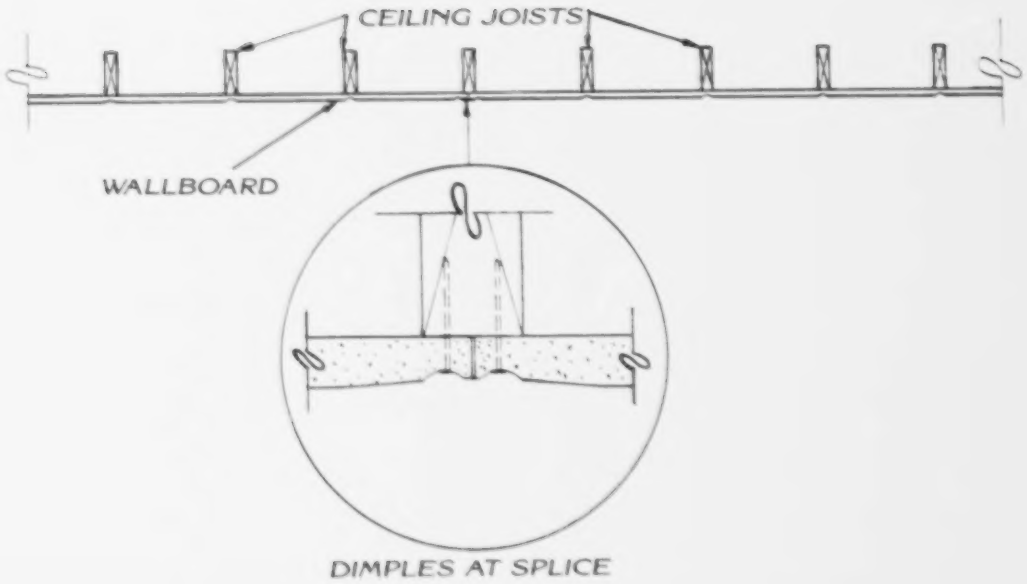
2. Position ceiling Ts to support wallboard sheet and to hold it in place

3. Beginning at center of sheet and working outward, nail wallboard by driving nails flush and then striking once more to make a dimple (See Figure 4)

(NOTE: Do not break the surface paper when nailing.)

JOB SHEET #1

FIGURE 4

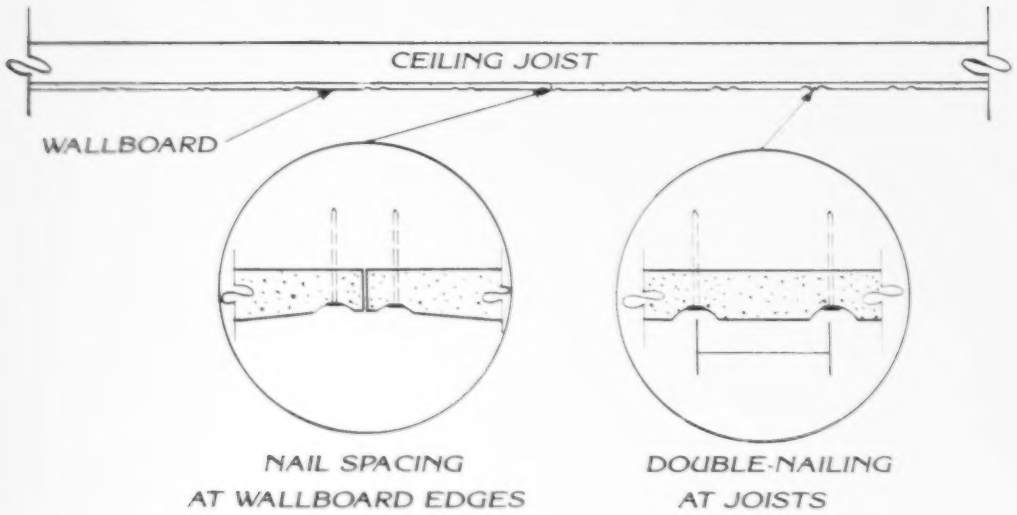


4. Double-nail sheet along joists by placing two nails 2 inches apart at 12-inch intervals (See Figure 5)

5. Nail one nail every 7 inches along wallboard edges (See Figure 5)

JOB SHEET #1

FIGURE 5



C. Lay out, cut, and install remaining ceiling wallboard

1. Measure ceiling and then subtract 1/8 inch from measured length

   (NOTE: Breaks must fall on joist or nail backing.)

2. Transfer measurement to finished face of wallboard

3. Hold straightedge or T-square on marks and use utility knife to cut through face paper

4. Break wallboard at cut

5. Use knife to cut paper on back side of wallboard

6. Use surform tool to smooth cut edge if necessary

7. Nail wallboard following procedures in Steps B-2 through B-5 for installing first full sheet

D. Lay out and cut openings for electrical boxes, switches, etc.

1. Measure distance of opening from the end and edge of wallboard

2. Transfer measurement to face of wallboard

3. Outline opening with pencil

4. Cut out opening with keyhole saw

JOB SHEET #1

III. Procedure for wall installation

A. Installing first full sheet of wallboard in top row

1. Beginning in a corner, hold full sheet of wallboard tightly against ceiling wallboard

2. Beginning at center of sheet and working outward, nail wallboard by driving nails flush and then striking once more to make a dimple

3. Double-nail sheet along joists by placing two nails 2 inches apart at 12-inch intervals

4. Nail one nail every 8 inches along wallboard edges

B. Cutting and installing remaining wallboard in top row

1. Measure length of wall and then subtract $\frac{1}{8}$ inch from measured length

2. Transfer measurements to finished face of wallboard

(NOTE: Wallboard over door and window openings may be put in position and cut in place.)

3. Hold straightedge on marks and use utility knife to cut through face paper

4. Break wallboard at cut

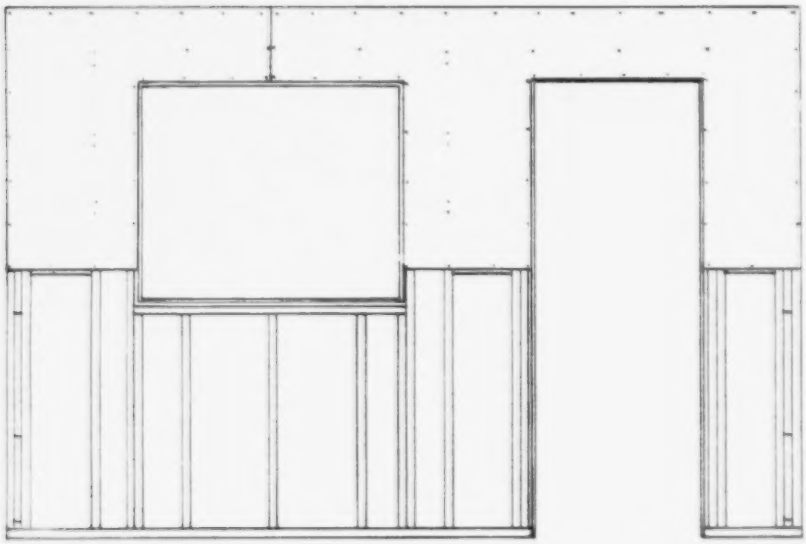
5. Use knife to cut paper on back side of wallboard

6. Use surform tool to smooth cut edge if necessary

7. Nail wallboard following procedures in Steps A-2 through A-4 for installing first full sheet (See Figure 6)

JOB SHEET #1

FIGURE 6

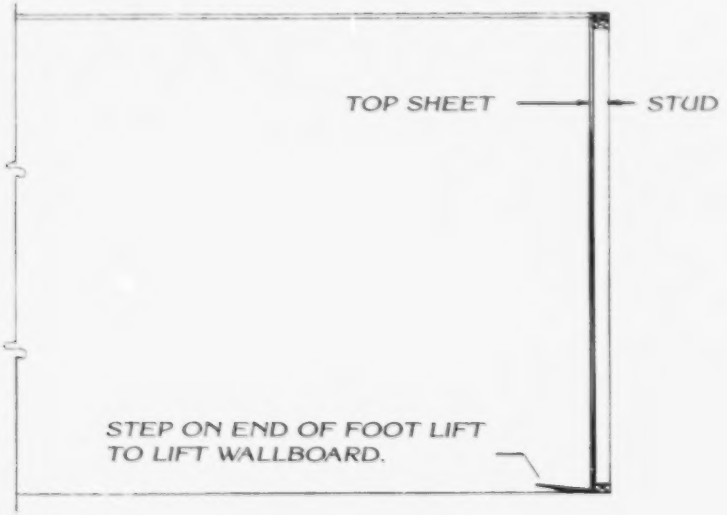


C. Cutting and installing wallboard in bottom row

1. Measure wall, mark measurements on wallboard, and cut wallboard, following Steps B-1 through B-6

2. Position wallboard and use foot lift to raise and hold sheet tight against sheet in top row (Figure 7)

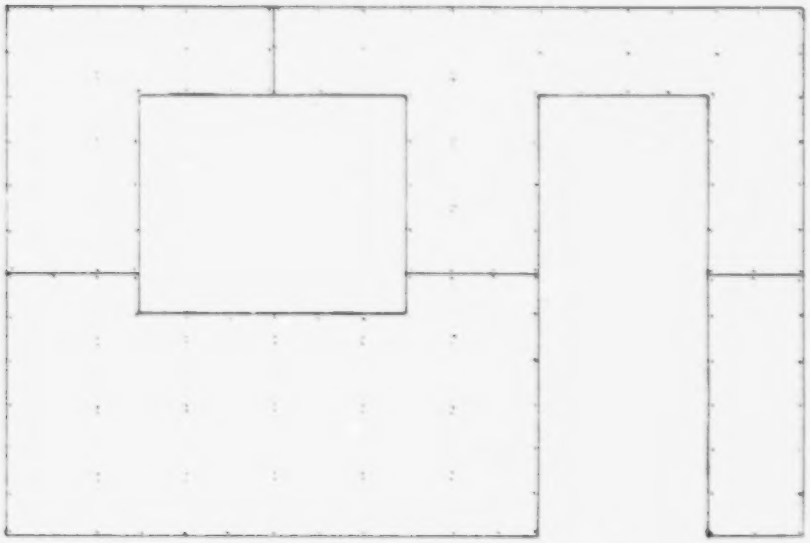
FIGURE 7



3. Nail wallboard following procedures in Steps A-2 through A-4 for installing first full sheet

4. Continue cutting and installing as required to complete wallboard installation (Figure 8)

FIGURE 8



IV. Procedure for installing metal corner beads

(NOTE: Metal beads are used only on outside corners.)

A. Measure length of outside corner

B. Cut metal corner bead to length if necessary

C. Position metal corner bead over outside corner and nail corner bead every 5 inches on both edges through wallboard into wood frame

D. Clean up area and put away tools and equipment

DRYWALL LAYOUT AND BASIC SKILLS
UNIT III

JOB SHEET #2 — FINISH WALLBOARD SURFACE

I. Tools and equipment

A. Drywall hammer and hatchet

B. Taping knife

C. 4-inch and 10-inch finishing knives

D. Mud pan

E. Joint tape

F. Joint compound

G. Corner beads (when appropriate)

H. Nails for corner beads

I. Sander and sandpaper

II. Procedure

A. Prepare walls for bedding and taping

1. Install all corner beads, nailing every 5 inches through the drywall and into the framing

2. Make a quick check to be sure all nails are set with proper dimples; correct as necessary

B. Bed and tape joints

1. Straight joints

a. Fill with joint compound channel formed by tapered edges of drywall sheets

b. Center tape directly over joint and embed tape by pressing it firmly into compound with knife

c. Smooth compound around and over tape to form level surface

(NOTE: Some compound should be squeezed from under the tape, but leave enough to form a good bond.)

JOB SHEET #2

2. Inside-corner joints

   a. Fold joint tape down the middle

   b. Apply compound to both sides of corner

   c. Press creased tape into corner with knife

   d. Smooth out compound on both sides of corner

C. Fill nail depressions

   1. Apply compound

   2. Draw knife across dimple with an even, smooth pressure

   3. Turn knife at a right angle to first application and draw it back across depression to smooth compound level with surface of drywall

D. Apply compound over bead flange of corner beads and out from the bead 4 to 6 inches

E. Finish joints, nail depressions, and corner beads

   1. After drying at least twenty-four hours, lightly sand all areas where compound was applied

      (NOTE: Do not damage the face of the drywall.)

   2. Apply thin coat of compound over all areas previously coated, feathering out edges 1 ½ to 3 inches beyond edges of first coat

   3. Let compound dry for at least twenty-four hours, and then sand lightly

   4. Apply another coat of compound over all areas previously coated, feathering out edges to a total width of 14 to 18 inches

   5. Let compound dry for at least twenty-four hours, and then sand lightly

      (NOTE: Conditions such as temperature and humidity may make it necessary to apply additional coats for a smooth surface. Follow the procedures in Steps 4 and 5 if additional coats are required.)

   6. Clean up area and put away tools and equipment.

DRYWALL LAYOUT AND BASIC SKILLS
UNIT III

JOB SHEET #3 — APPLY LAMINATED GYPSUM WALLBOARD

I. Tools and equipment

A. Drywall hammer

B. Utility knife

C. Carrier lifter

D. Drywall lifter

E. Drywall and keyhole saws

F. Drywall T-square

G. Drywall screwdriver

H. Rubber mallet

I. Sawhorses

J. Caulking gun or adhesive spreader

K. Gypsum wallboard (backer board)

L. Gypsum wallboard (recessed edge)

M. Screws

N. Adhesive (with manufacturer's instructions)

II. Procedure

A. Install base layer (backer board)

1. Position panel with long length placed vertically

(NOTE: When using vinyl panels for face layer, install base layer horizontally.)

2. Center edge of panel on stud

3. Screw panel to stud

(NOTE: Screw spacing for adhesive-laminated face should be 8 inches on center at joints and 12 inches on center in the field.)

JOB SHEET #3

4. Continue installing panels, repeating Steps A-1 through A-3 until base layer is complete

B. Install face panel

1. Cut panel for length

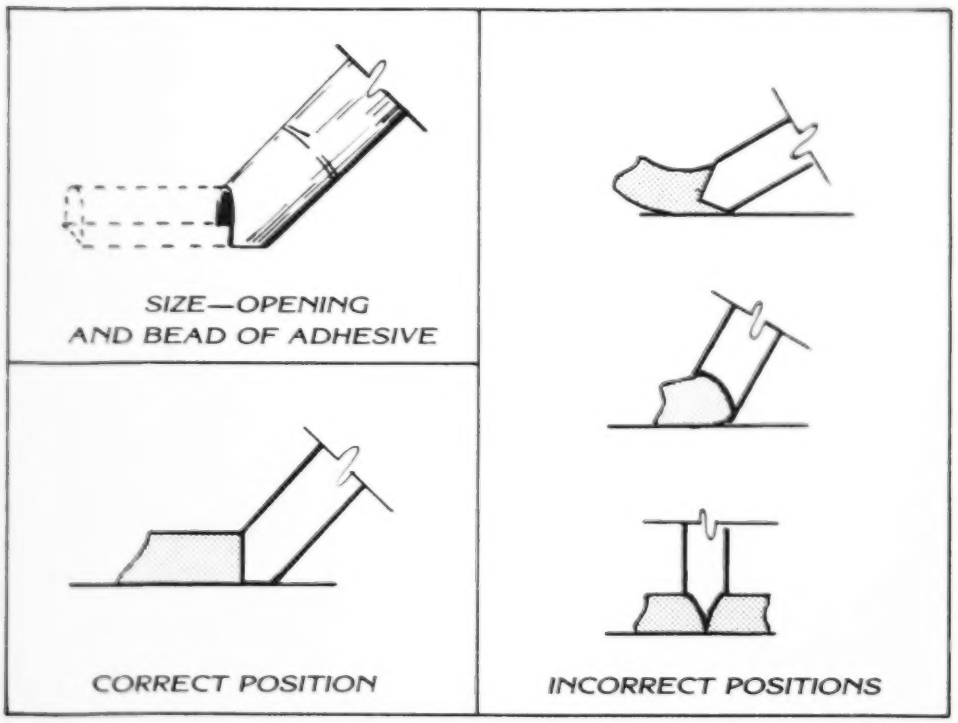
   (NOTE: Face panel will be installed horizontally.)

2. Lay panel on sawhorses with back side up

3. Spread adhesive on panel using caulking-gun or spreader method (Figures 9 and 10)

   (NOTE: When using a caulking gun, adhesive beads should be 3/8 inch wide by 1/2 inch high and maximum of 2 inches on center.)

FIGURE 9: Caulking-gun method



JOB SHEET #3

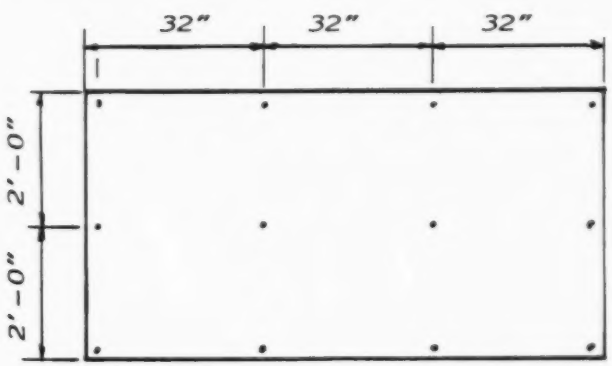
FIGURE 10: Spreader method

4. Position top panel on base panel horizontally

5. Temporarily nail panel and impact entire area with a rubber mallet to assure good bond

6. Screw panel to studs, using pattern shown in Figure 11

FIGURE 11



JOB SHEET #3

7. Impact entire area with a rubber mallet to assure bond

8. Nail panel to studs (wood studs)

   a. Nail panels on edge where tape will cover

   b. Drive temporary nails in field of panel

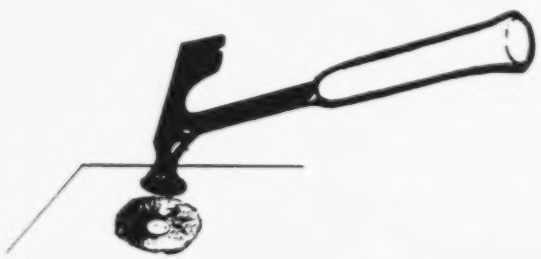
      (NOTE: Duplex nails or scraps of gypsum wallboard and any smooth nail long enough to penetrate the stud may be used.)

9. Place a block of wood under hammer and remove temporary nailing

   (NOTE: Do not break face paper.)

10. Dimple nail hole with drywall hammer (Figure 12)

FIGURE 12



C. Clean up area and put away tools and materials

DRYWALL LAYOUT AND BASIC SKILLS
UNIT III

JOB SHEET #4 — INSTALL PREDECORATED WALLBOARD

I. Tools and equipment

A. Folding rule and steel tape

B. 4-foot or 6-foot level

C. Hammer

D. Scribe

E. Drywall T-square

F. Pencil

G. Notched adhesive spreader or laminating spreader

H. Color coded nails

I. Inside corners

J. Outside corners

K. Base

L. One pair of sawhorses

M. Adhesive and manufacturer's instructions

II. Procedure for installing wallboard

A. Stand panels on end around room and arrange so that adjoining panels match as to grain patterns and color

B. Fit first panel

1. Align one edge of panel at inside corner with leading edge over a stud

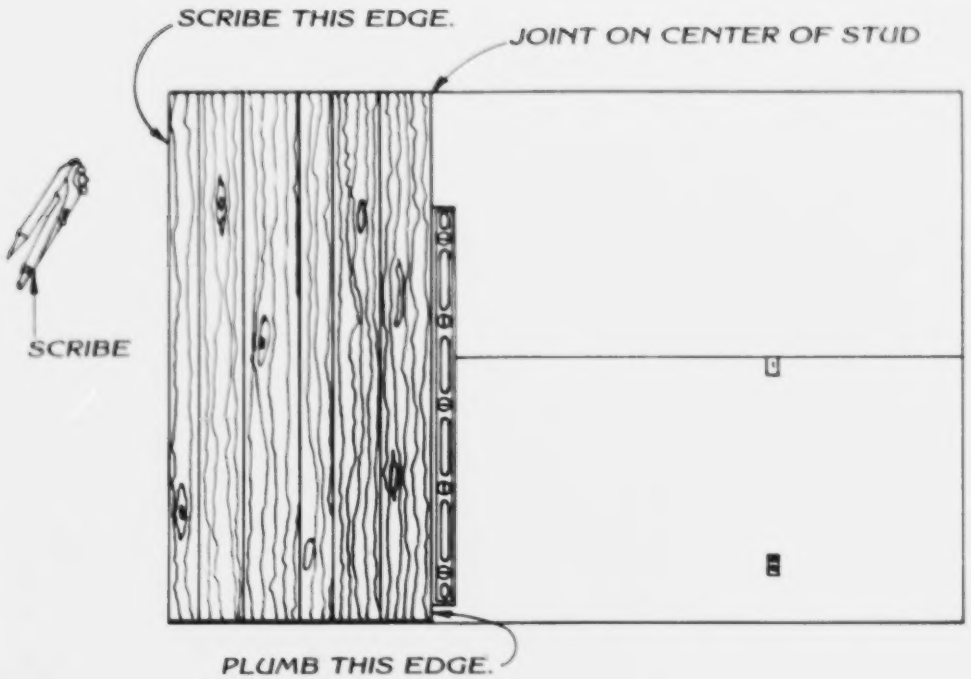
(NOTE: The edge opposite the starting point is called the *leading edge*. All joints must fall on studs. See Figure 13.)

2. Plumb leading edge of panel (See Figure 13)

3. Scribe inside-corner edge (See Figure 13)

JOB SHEET #4

FIGURE 13



4. Place panel on sawhorses and trim to scribed mark

C. Fit remaining panels

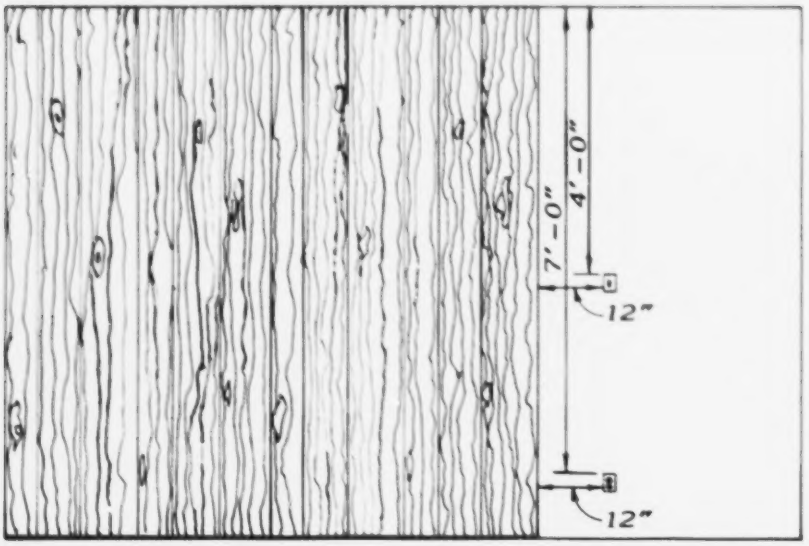
1. Align panels with sides of door and window openings whenever possible to conserve materials

2. Measure and lay out cutouts for switches and receptables

a. Measure for cutouts from top of each panel and from leading edge of previous panel (See Figure 14)

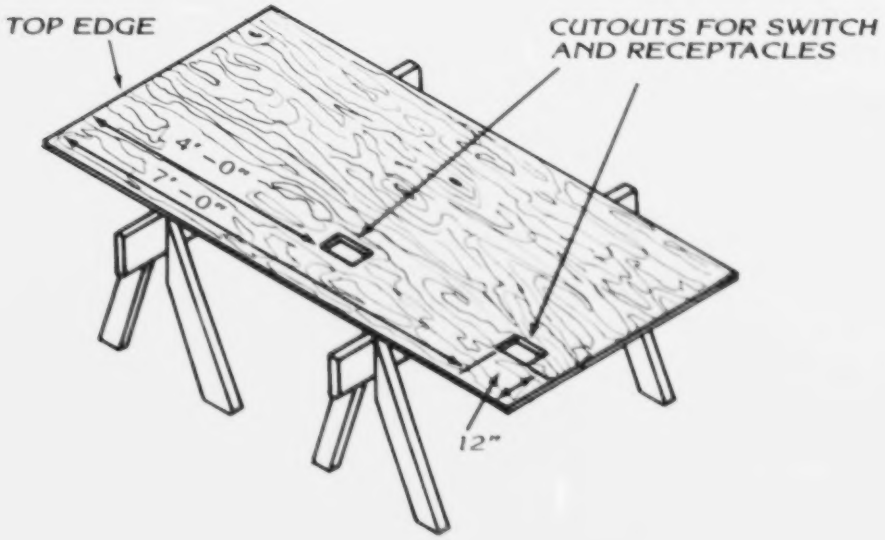
JOB SHEET #4

FIGURE 14



b. Mark and cut holes on face side of panel (Figure 15)

FIGURE 15



c. Scribe and cut panels to fit corner

D. Color joints if desired

(NOTE: Some craftsmen like to color the backing material at each joint with marker, shoe polish, or paint to prevent any of the backing material from showing at joints.)

E. Install panels, using nailing method or adhesive method

1. Nailing method

a. Beginning at top and working down, nail paneling with 16-inch spacing along each stud

b. Drive nails flush

2. Adhesive method

(NOTE: Follow manufacturer's instructions when instructions differ from following procedure.)

a. Use notched spreader to apply compound over entire back surface of panel (Figure 16)

(NOTE: Notches in spreader should be 3/8 inch wide x 1/2 inch high and spaced a maximum of 2 inches on center.)

FIGURE 16

JOB SHEET #4

b. Position panel on base panel

c. Press panel to wall and carefully impact entire area with rubber mallet to assure bond

d. Nail panel sparingly if necessary

F. Clean up work area and put away tools and equipment

DRYWALL LAYOUT AND BASIC SKILLS
UNIT III

TEST

NAME _____ SCORE _____

1. Match terms associated with drywall basic skills to their correct definitions. Write the correct numbers in the blanks.

_____a. Compound used to embed perforated tape to wallboard joints, to finish over tape and corner bead, and to finish over nail and screw heads

_____b. Paper tape used as reinforcement at wallboard joints to keep surface from cracking

_____c. Pattern used when two nails are spaced 2 inches apart every 12 inches; pattern used on intermediate joists and studs

_____d. Rigid sheathing material made with a noncombustible core (usually gypsum) that is surfaced with treated paper or some other sheet material; sheathing material applied to interior finish walls and ceilings

_____e. Finish coat of compound that covers all previous coats

_____f. Strips of wood nailed on top plate between joists and at inside wall angles of partitions; provides a solid base for nailing wallboard

_____g. Joint compound applied to depression formed by butt joints and tapered wallboard edges

_____h. Place where edges of two pieces of wallboard meet

_____i. Any rigid sheathing material applied to interior finish walls and ceilings

_____j. Impression on wallboard surface formed by a nail driven to proper depth

1. Drywall
2. Wallboard
3. Backing
4. Joint
5. Perforated tape
6. Joint compound
7. Bedding
8. Topping
9. Featheredge
10. Quick-weld compound
11. Dimple
12. Double nailing
13. Laminate
14. Cutouts
15. Scribe
16. Layout

TEST

_____k. To make by uniting two or more layers of material

_____l. Compound specially blended to set in from 20 to 90 minutes

_____m. To spread joint compound or topping so that it tapers to a thin edge

_____n. Detailed plan, design, or arrangement of a project

_____o. Adjustable tool used to make irregular parallel marks on an object for cutting and fitting a piece of material

_____p. Openings that are made for convenience of access to other areas

2. Select from the following list skills pertaining to drywall installation. Write an "X" in the blank before each correct answer.

_____a. Install corners

_____b. Sand finish surface

_____c. Install dywall using nails, screws or adhesives

_____d. Apply finish coat

_____e. Measure and level

_____f. Bed and tape joints and internal corners

_____g. Fill nail or screw depressions

_____h. Properly cut drywall with power saw

3. Select from the following list methods used to apply drywall. Write an "X" in the blank before each correct answer.

_____a. Stapling method

_____b. Brace method

_____c. Double nailing method

_____d. Screw method

_____e. Furring strip method

_____f. Adhesive method

4. State four items to look for when inspecting a job prior to installing drywall.

a. _____

b. _____

c. _____

d. _____

TEST

5. State four guidelines for installing drywall.

   a. _____

   b. _____

   c. _____

   d. _____

(NOTE: Test item 6 lists the job sheets. They are an important part of this test. If they have not been completed, check with your instructor.)

6. Demonstrate the ability to

   a. Install gypsum wallboard.

   b. Finish wallboard surface.

   c. Apply laminated gypsum wallboard.

   d. Install predecorated wallboard.

DRYWALL LAYOUT AND BASIC SKILLS
UNIT III

ANSWERS TO TEST

1.

a. 6	d. 2	g. 7	j. 11	m. 9
b. 5	e. 8	h. 4	k. 13	n. 16
c. 12	f. 3	i. 1	l. 10	o. 15
				p. 14

2. b, c, d, e, f, g

3. a, c, d, f

4. Answer should include any four of the following.

   a. Ceiling backing been installed
   b. Walls and studs straight
   c. Blocking for cabinets, sinks, and bath fixtures been installed
   d. Electrical rough-in completed
   e. Plumbing rough-in completed
   f. Heating vent and air conditioning rough-in completed
   g. Exterior wall insulation been installed
   h. All inspections been made and approved

5. Answer should include any four of the following.

   a. Always apply ceiling drywall before applying drywall to walls
   b. Always apply drywall at right angle to ceiling joist
   c. Whenever possible, install drywall horizontally on walls
   d. Cut openings for fixtures no more than 1/8 inch larger than fixture
   e. Plan installation so that vertical joints are above door and window openings whenever practical
   f. Joints should be at least 6 inches from end of headers to reduce cracking and joint treatment
   g. When sanding surface of drywall, do not damage the face of the drywall
   h. Stagger panels on opposite side of wall so that joints occur on different studs

6. Performance skills evaluated to the satisfaction of the instructor.